

ANNUAL INDEX

# PORTABLE 100

The magazine for  
Model 100 users

NOVEMBER  
1984  
\$2.95



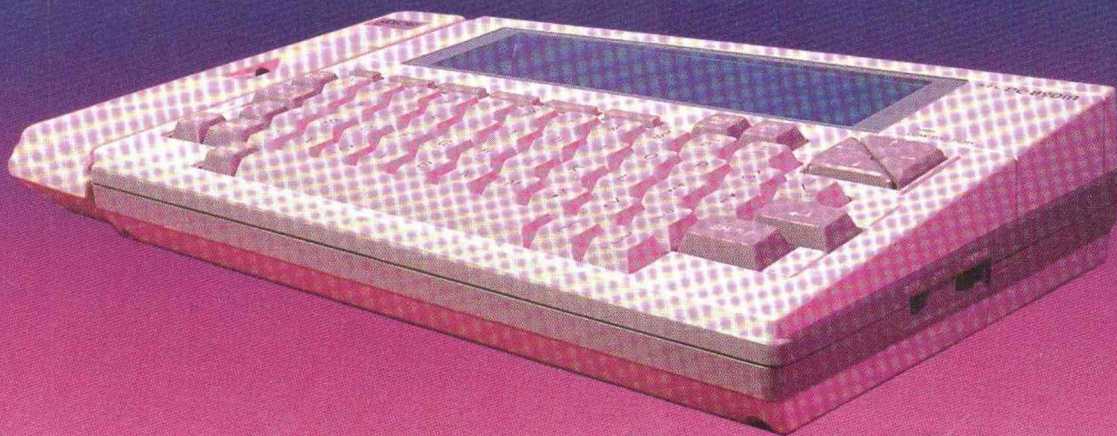
## THEY SHALL RETURN!

A winning lottery number  
often returns—use a  
100 to find out how often.



71486 02601

\*Tandy Corporation



# NEC 32K *VS.* SIDECAR 128K

## **Up To 192K Of Memory On-line For Your NEC PC-8201 Means Goodbye To Unreliable Cassettes, And Bulky Disk Drives.**

The problem with most portables is utility gets sacrificed for portability. Only being able to take 32K of files with you is a real pain. Things like form letters, data bases, spreadsheet layouts, and other files have to either be left behind or you have to mess with external storage devices. The inconvenience of having to bring along cassette players, and disk drives (not to mention the hassle getting them to work) can make you wonder why you brought this "productivity tool" in the first place.

### **THE NEC SOLUTIONS**

The NEC PC-8201 has two solutions for this problem. First it has the ability to house up to 64K of RAM inside the machine. Through a technique called "bank switching" you can access up to three different 32K "banks" of memory: two inside the computer and one in a plug-in cartridge. This is a big improvement. But the problem here is each additional 32K cartridge from NEC costs \$395.

### **PURPLE'S SOLUTION**

Many of you will remember us as the first company to manufacture an aftermarket 8K memory module for installation inside the computer. This product was so successful that other companies copied it. Our customers

kept asking for more storage, and the result is our SideCar™. It uses a bank switching system similar to NEC's to let you access up to *four additional banks of 32K, giving the NEC PC-8201 up to 192K of on-line memory!* Now there really is a portable computer of amazing proportions.

### **THE PORTABLE SOLUTION**

Now you can have gobs of data instantly available at the flick of a switch. The SideCar™ plugs into the NEC PC-8201 in the same slot the NEC 32K cartridge uses. The memory is powered by two standard size AA batteries when the computer is not in use. You can even change the batteries without losing the data. SideCar™ comes standard with 32K of memory, with up to three additional 32K modules available giving it a total capacity of 128K. They are simple plug-in options so you can buy a 32K version now and add memory as needed. The batteries will support the memory for up to one year.

### **NO RISK OFFER**

We give you a 30 day satisfaction guarantee and a 1 year warranty on your SideCar™. If you are not completely satisfied for any reason, we will refund the entire amount of your

purchase. If at any time during the one year warranty period your SideCar™ requires service, we will fix or replace it within 48 hours.

### **THE BOTTOM LINE**

The basic 32K SideCar™ with 32K in bank 1, expandable to 128K, is \$349 (Part #SC32). User installable 32K banks are \$145 for bank 2 (Part #SCB2), and \$175 each for bank 3 and 4 (Part #SCB34). If ordered together the banks are installed and tested at the factory.

Price includes shipping, and insurance in the continental USA. Your SideCar™ will be shipped the next business day via UPS surface freight. If you want 2nd day air service, just add \$4. No extra charge for VISA/Mastercard, or American Express. For fastest delivery send certified checks or credit card. Calif. residents add 6% sales tax. Personal check take 3 weeks to clear. Call for purchase order information.

DEALER INQUIRIES INVITED

### **PURPLE COMPUTING**

2068 Ventura Blvd.  
Camarillo, CA 93010

Outside California toll free  
**(800) 732-5012**

Inside California (805) 987-4788

# OUR BIGGEST ACHIEVEMENT IS ALSO OUR SMALLEST.



**Only Text Power 100™ has Page Plot.™ At a glance you can see the full format of every page before printing.**

Include the make of your printer with your order.  
Text Power 100™ works with parallel printers only.  
Include \$10.00 for each additional printer.  
Make checks payable to The Covington Group.

Send your order to:  
The Covington Group  
310 Riverside Drive, Suite 916  
New York City, N.Y. 10025  
Questions? Phone 212 678-0064/864-1700

Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Master/Visa Card No. \_\_\_\_\_ Exp. Date \_\_\_\_\_

Computer \_\_\_\_\_ Signature \_\_\_\_\_

# TEXT POWER 100

## Who says size doesn't count?

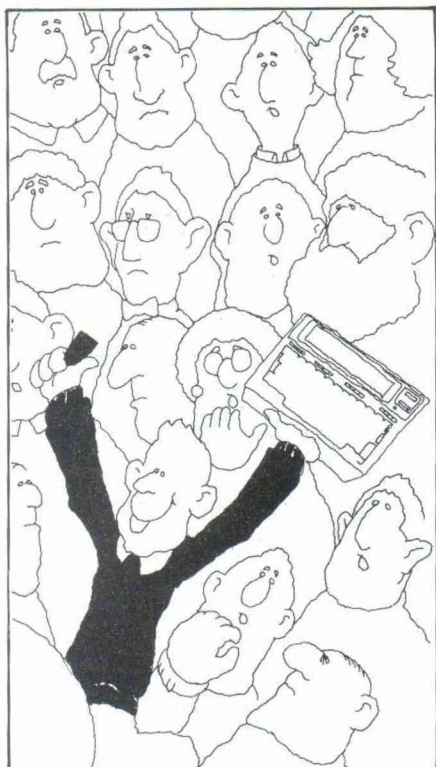
From the software ads around here, you might get the impression that your portable computer can store the knowledge of the universe. But it can't. That's why you need to know just how big the software is. Or how small.

Keep this in memory: Text Power 100™ is 2,500 bytes long. Elf-writer (by Ceres Software) is 10,000 bytes long. Write + (by Portable Computer Support Group) is 3.5K. The Traveling Writer™ (by Traveling Software) is 5000 bytes. When our competitors' ads don't tell you how big their programs are, they're trying to tell you something.

Size is just one advantage of our 100 percent machine-language code. The other is speed. Text Power 100™ formats faster than you can imagine. Faster than all of the competition's products working in parallel. Fast enough to format the Bible in 12 minutes. Right-justified.

Text Power 100™ features: Page Plot.™ merge text, edit mode, label printing, page numbering, formatted preview mode, parameter/file memory, right justification, footers, headers, internal format controls, page length, top margin, bottom margin, left margin, right margin, double/single spacing, vertical center, horizontal center, page break display, new page command, full printer customization and more.

Text Power 100.™ For the Model 100, Olivetti M10 and NEC PC-8201A. \$49.95 plus \$2.00 shipping. Available exclusively from The Covington Group/310 Riverside Drive, Suite 916, New York City, NY 10025/212 678-0064, 864-1700.



page 38

## FEATURES

### 38 LET YOUR 100 GET YOU A PIECE OF THE ACTION

By Ronald F. Balonis

Lotteries have become billion dollar revenue makers for states. With some number analysis from your 100, they might make some revenue for you, too.

## ARTICLES

### 54 BEFORE YOU MANAGE YOUR RAM, KNOW WHAT'S IN IT

By Ronald F. Balonis

If you want a productive relationship with your Model 100, RAM management is a necessity. Here's a tool to make that job easier.

# PORTABLE 100

NOVEMBER 1984  
VOLUME 2 NO. 11

56

### SAVING DOOMED FILES AFTER A COLD START

By Richard J. Perry

When you're staring at a blank menu where once there was a treasury of RAM files, turn to Dumper.

59

### PORTABLE 100 INDEX

September 1983 - August 1984

## DEPARTMENTS

6 PREVIEW

8 MAIL.100

17 NEW PRODUCTS

12 THE WIRE

28 BOOKS

Cover and feature illustration by Rod McCormick

## REVIEWS

30 MONOPOLY  
*Custom Software*

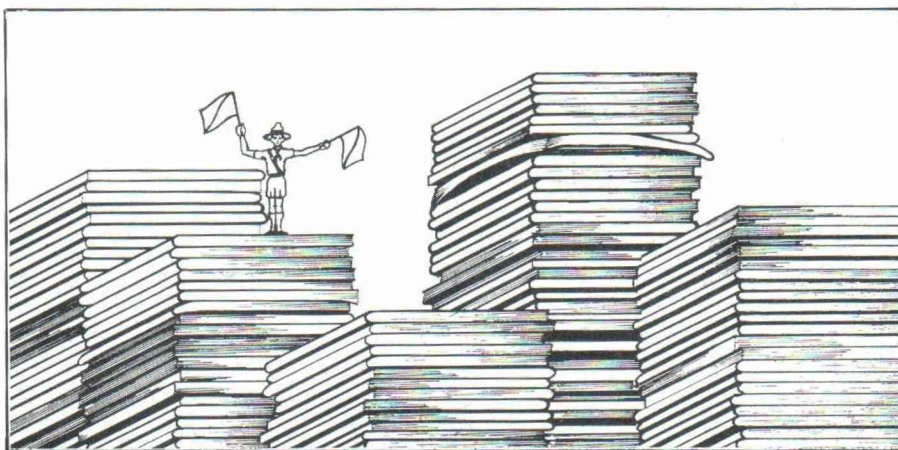
31 EXPENSE MANAGER  
*Traveling Software Inc.*

## COLUMNS

21 FULL DUPLEX  
By Terry Kepner

25 BUSCH LEAGUE  
*Auto Program — Part 7:  
Redefine F Keys And Save  
Them With Key Definer*  
By David Busch

51 END USER  
*Tandy Sells Chevies  
Of Computer Industry*  
By Peter M. Stanwyck



page 59

**PORTABLE 100** is published monthly by Computer Communications Inc., Highland Mill Mall, Camden, ME 04843. James S. Povec—President, Carl Cramer—Vice President.

**Subscriptions are \$32 for twelve issues. User Group subscription rates available.** Outside U.S.A.: write for further information. Dealer inquiries: Send to P100, P.O. Box 250, Highland Mill Mall, Camden, ME 04843.

**POSTMASTER:** Please send changes of address to Portable 100, P.O. Box 250, Camden, ME 04843. Application for mailing at second class rates pending at Camden, Maine, and additional mailing offices.

When DATAPORT/CS introduced the first micro-size letter-quality computer printer, it was such a big hit even we wondered what we'd do for an encore.

Now we know.

And we are happy to present the enhanced version of this revolutionary letter-quality computer printer that we used to write the product announcement you're reading. The DataPort LQ retains the title of the lowest priced letter-quality printer in the world!

You'll be happy to know the price remains a solid \$295.00.

Like the original printer, the DataPort LQ is still 8-1/2 by 11 inches in size and only two inches thick. As you'd expect, the enhanced model of the LQ is still made with industrial quality components. We give you a one-year unlimited warranty on every component inside the printer. The computer interface is Standard Parallel and Centronics Compatible. Maximum column width is 80 characters per line and printing speed is 15 characters-per-second. The printer uses standard 8-1/2 inch plain paper by any length.

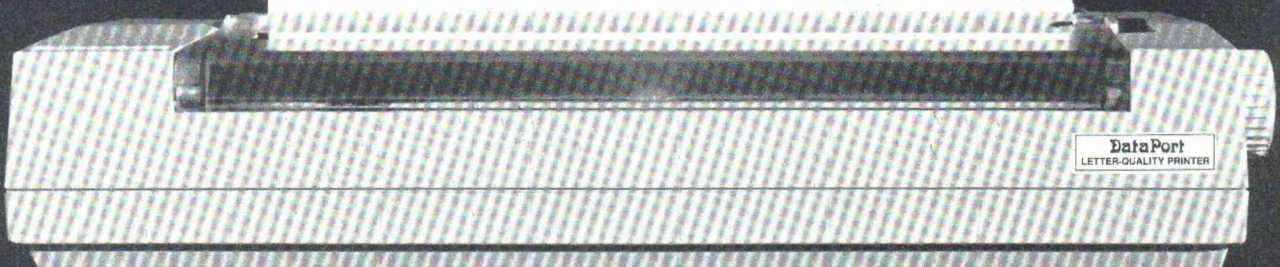
The DataPort LQ letter-quality printer is built with the same degree of performance and reliability found in much more expensive models. Printing is bidirectional, and the ASCII 96-character set is well suited for most personal or business needs. It can underline or BOLDFACE with ease --- and "understands" all other control codes sent from your computer. All this for just \$295.00.

There's even more to our encore. Now you can write in a taxi, correct it in a coffee shop, and print it on a plane. Here's the rest of the DATAPORT/CS collection for your consideration.

The DataPort DM is a full featured dot matrix battery-powered or 110 volt AC printer that can printout both bidirectionally and unidirectionally, on ordinary paper, and still fit into your briefcase, leaving room for your notebook-size computer. The DataPort DM can print out a full 80 column page of text, almost without a sound. The high quality printer head not only prints on ordinary paper with its ribbon cassette but it can print on thermal paper as well. The DataPort DM is notebook-size and zips through your text at 30 characters per second. The DataPort DM supports a Standard Parallel Centronics interface and is available for \$225.00.

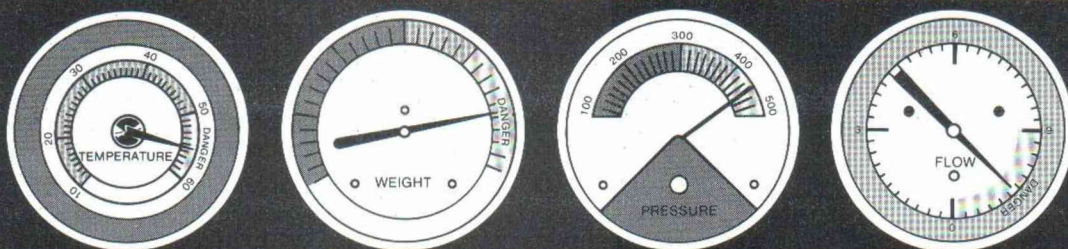
The DataPort MG is a 40 column micro-size dot matrix printer with selectable column widths, upper and lower case characters and true bit mapping graphics capability. It can be battery powered and is supplied with a 110 volt AC adapter. The DataPort MG is truly pocket size---approximately 4 inches square---and of course, the interface is Standard Centronics Parallel. The DataPort MG uses plain paper and a standard ribbon and is offered at \$155.00.

DATAPORT/CS is the wholly-owned subsidiary of Central Stationers, Inc., founded thirty-four years ago in the San Francisco bay area. We invite you to call 415/ 233-2530 for ordering information, or write: DATAPORT/CS, 169 South First Street, Richmond, CA 94804 for a data packet on the products mentioned here. Shipping and insurance on all orders is an additional \$10.00 to any city in the United States.



(415) 233-2530

# What could happen in an hour?



A lot of things could go wrong in an hour . . . Or right, with a Quasitronics Q-3000 Series Intelligent Peripheral.

So why not let things go right . . . with a Quasitronics Q-3000 Series Intelligent Peripheral? That's all you need to turn your computer into a sophisticated data acquisition and control system. In record time. And we make it easy because we put the intelligence in the box. You'll never have to worry about setting up complex interfaces that take days to configure. But you will have to think about the level of intelligence you want.

Our high performance Q-3010 and Q-3020 support the ever-popular BASIC. All you need is a terminal to write your specific application program. Our optional non-volatile memory even protects your program when the power is off. And because we've built in a TINY BASIC interpreter, these two systems can stand alone . . . without constant direction from the host computer.

Our very economical Q-3014 and Q-3024 talk in simplified ASCII command code. This means you'll have sharp, efficient communication . . . with control commands sent by the host. And whether you're comfortable with FORTRAN, PASCAL, BLISS\*, or C, you'll develop programs in the language that's right for you.

Every Q-3000 has remote capability through a built-in short haul modem and standard RS232 serial port. Your system will talk with hosts up to 1000 feet away over an asynchronous serial communication link in ASCII. So you'll always have up-to-the-minute data reporting and function control during critical operations. And for data collection from hostile environments, the dual slope A/D converter reduces interference from electrical noise.

To give you additional flexibility, a variety of I/O channel combinations are available. Both the Q-3010 and Q-3014 have 8 analog inputs, while the Q-3020 and Q-3024 have 2 analog inputs. All Q-3000's come with 4 digital outputs for driving a wide range of loads. When set in conjunction with their built in real time clocks, the I/O channels do everything from logging data to activating alarms and controls. At selected intervals and values.

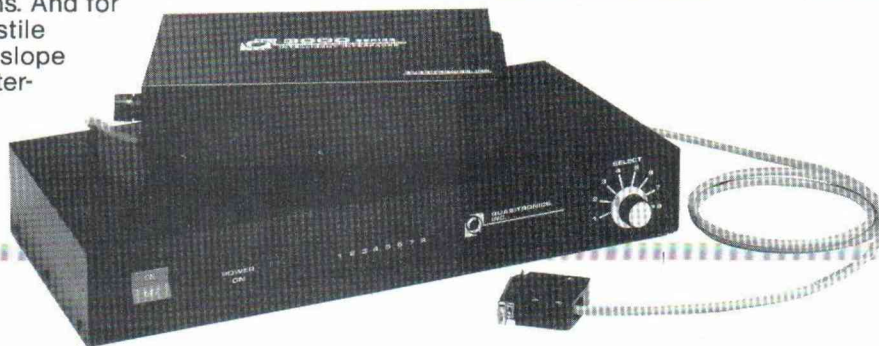
So why wait another hour to see what can go wrong in your operation, when so much can go right with a Q-3000 Series Intelligent Peripheral. We're so sure about that, we even give you a unique 1 year warranty against manufacturing defects.

For more information on Quasitronics and our Q-3000 Series Intelligent Peripherals, circle the reader service card or call toll-free 800/245-4192.

QUASITRONICS.  
WE MAKE QUALITY AND PERFORMANCE  
AFFORDABLE, TODAY.

## General Specifications

Analog Input	Serial I/O	Digital Output
Standard Full Scale Input Voltage is $\pm 5$ volts.  Resolution is 1 part in 5,000 or 1 part in 20,000.	RS-232 or current loop, ASCII message format.	Open collector drivers to control LED's, relays, alarms.



\*Trademark of Digital Equipment Corp.



**QUASITRONICS, INC.**

211 Vandale Drive, Houston, PA 15342  
412/745-2663 • Toll-Free: 800/245-4192

**an Astrotech International Company**

Circle No. 51 on Reader Service Card

# PORTABLE 100

The magazine for  
Model 100 users

## Editor

John P. Mello Jr.

## Assistant to the Editor

Nancy L. Laite

## Contributing Editors

Terry Kepner, David Busch  
Bill Walters, Peter Stanwyck

## Art Director

Paige Garland Parker

## Advertising Production

Peter D. Koons

## Production Consultant

Marjorie Strauss

## Publisher

James S. Povec

## Associate Publisher

Carl Cramer

## Advertising Director

Peter K.J. Montross  
(207) 236-4365  
P.O. Box 250, 15 Elm Street  
Camden, Maine 04843

## Business Manager

James W. McBrien, Jr.

## Office Manager

Nancy A. Wight

©Computer Communications, Inc., 1984. All rights reserved. Contents of this magazine may not be reproduced in whole or in part unless expressly authorized in writing by the Publisher. TRS-80 and Model 100 are trademarks of the Radio Shack Division of Tandy Corporation.

This magazine is published by Computer Communications, Inc. who is solely responsible for its contents.

The Publisher assumes no responsibility for the return of unsolicited manuscripts, queries or artwork. Materials submitted to Portable 100 should be accompanied by a stamped, self-addressed envelope. Editorial offices located at 15 Elm St., Camden, ME 04843.

U.S.A. Newsstand distribution by Curtis Circulation Company.

CIS ID: 76703,372

## Stocking Stuffers For Your Portable 100

With you in mind,  
Alpine Data Systems, Inc. presents three inspiring  
Christmas gifts for the Model 100 owner.

### Sky Raider



The red alert has sounded and the deadly Borons are closing in! Faster and faster, they seek your ship out — prepare or be eliminated! ASG-110 \$19.95



### Mind Master



The Mind Master presents the ultimate test of your memory — but time is running out! Meet with the Master and prepare to have your wits challenged to the limit! ASG-115 \$19.95



For the well-seasoned bridge player as well as the beginner — now you can play contract bridge ANYTIME! The program handles bidding, actual play of hand and scoring. ASG-210 \$19.95



### Bridge



Send check, money order, or VISA/MC number. For immediate delivery call our 24-hour hotline, or use our new Compuserve® EMAIL number for information or credit card orders.

Compuserve® is a registered trademark of Compuserve, Inc. and H&R Block Company.

## DATA SYSTEMS, INC.

Dept. PI, P.O. Box 1157  
Elizabeth City, NC 27909  
Phone: (919) 338-3202  
EMAIL: 75735, 1440



Yes, stuff my sock!

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Exp. Date \_\_\_\_\_

Order any 2 games and save over 10% Only \$34.95  
Order any 3 games and save over 15% Only \$49.95

Qty. \_\_\_\_\_ Total \_\_\_\_\_

Order any 2 games and save over 10% Only \$34.95  
Order any 3 games and save over 15% Only \$49.95

Qty. \_\_\_\_\_ Total \_\_\_\_\_

Please add \$2.00 shipping and handling.  
NC residents add 4.5% sales tax.

Circle No. 50 on Reader Service Card

# PREVIEW

JOHN P. MELLO JR.



When I worked at another computer magazine, the technical editor responsible for titling articles did his best to make every head as cute as possible. I found the titles clever and couldn't understand the vociferous condemnation of them by our readers.

Then I tried to find something in the magazine's annual index. Ouch! Once amusing titles now made me grimace and curse. What I wanted was there but obscured behind wit thicker than industrial fog.

This month *Portable 100* publishes its index to its first year, September 1983 to August 1984. Cruising through the index, I found a few lapses into cuteness but for the most part, information value has been favored over entertainment value.

All input for the index — all 39K of it — was done on a Model 100. How? Let's start at the beginning.

I knew something like the index would gobble up hours of computer time and increase the pressure on people needing access to a desktop computer, so I was determined to divert pressure from the desktops. I devised a plan.

Using T-Base (reviewed last month in *Portable 100*), I set up a data base for the index in a 100. Then I enlisted our freelance viking, Bonnie "Born to Raise" Hellevig, to input information on year one's articles.

Not only did this remove a source of pressure on the office's desktop contingent, it allowed Bonnie to work on the project at home and at her leisure.

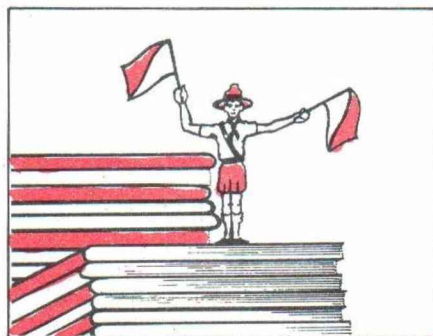
With the index data base, Bonnie found T-Base, in a 32K 100, stopped accepting input when the program's data file topped 16K. At that time, she'd bring in the Tandy pico, we'd dump its contents to a TRS-80 Model 4 using Disk+ (also reviewed last month in *Portable 100*) and off she'd go to fill up the 100 again.

When Bonnie finished her part of the project, I realized I had made two

errors in structuring the index.

First, I had made "month" an alpha field. This fouled up the order of the entries because T-Base automatically sorts them as they're entered. All the months were in alphabetical order! It seemed I would have to reenter all the months as numbers!

That wouldn't be the case, I thought, if I had a global search and replace. And I did have one — but not in the 100. I loaded the raw data files into a Tandy 2000 and used a program called Telecommuter from Sigea Systems to replace the alpha months with numeric ones.



A digression here about Telecommuter, made for the 2000 and IBM PC: It's a great program. It applies the elegance of the Model 100 to a larger system by using the 100's text and communication software as its kernel, then expanding on it. Essentially, it makes the 2000 a 100 with a 50K ROM.

Telecommuter solved only half the month problem. While the months had been changed to numbers, they were still out of order. And I discovered a second problem: The author field appeared before the year field in the data base.

Both problems were solved with T-Base's sort function. I loaded the index's data files back into the 100 and rearranged the fields with a sort. This automatically placed the months in the right order, killing two problems with one sort.

Now I faced two larger problems. How do I make the tripartite data base

one index? How do I edit a document exceeding 80 columns?

Using T-Base's report program, I created a report using only five of the index's six information fields. And instead of sending a report on each file to a printer, I sent the report out the 100's RS232 to the 2000. This gave me the files as they would have appeared on paper, only instead of on paper, they were on my 2000's CRT.

Once in the 2000, I appended the six reports together — three for the first five columns, three for the last one — and edited them.

That done, I printed two documents on 8.5-inch-by-11-inch paper — one document for the first five columns, one for the last column. I pasted the documents together to get a hard copy of the index.

The magentic form of the index was sent by modem to typesetting in two files and set like any other *Portable 100* article.

Was all this effort worth it? Couldn't dBase II have done the job easier? I don't know. I didn't have three days to learn dBase II and I didn't have a computer I could afford to tie up for two weeks with data-entry. All I know is the job got done and it wouldn't have without a 100.

\*\*\*

With this issue, *Portable 100* is changing its lineup a bit. Professional demands on Bill Loudon, Jake Commander, and Bill Walters make them unable to continue writing for us. Jake and Bill Walters, however, have promised to pen an article for us occasionally.

We've also changed our approach to New Products. While still keeping you informed about the latest in the Model 100 world, we are making it a more lively forum, with more information about the personalities producing products for the 100 and tidbits about what's being developed for the 100. Let us know what you think of this new format. ◀



## Our Batteries Take You Anywhere

Whether you're writing your novel in the hills of Texas, your memoirs while sailing to Antiqua or just plain tired of spending time under your desk looking for outlets, PRAIRIE POWER batteries make "Briefcase Computing" a reality.

There's nothing complicated or expensive. Just plug one of our small units into the side of your Model 100, Olivetti M10 or NEC 8201A and forget about electricity. Gain dramatic savings over cost and computing time of AA's.

- PRAIRIE POWER is rechargeable
- Electrolyte immobilized technology
- Leak-proof and totally carefree
- 5' cable included
- Fits into standard cases
- Universal charger available
- For any 6-Volt applications such as radios, recorders, etc.
- Choose weight and battery size appropriate to your needs
- 24-hour ordering
- No memory like Nicads
- Not gelled-cells

### SPECIFICATIONS

Size	Rating	Weight	Dimensions
8 amp. hr.	160 hrs. (32K)	3.6 lbs.	6x3.75x2
5.5 amp. hr.	100 hrs. "	2.7 lbs.	6x3.7x1.3
2.6 amp. hr.	54 hrs. "	1.4 lbs.	6x2.3x1.3

Bluestem Productions, Box 334, Wayzata, MN 55391, 612-927-2870 (24 hrs.)

Please send me:

\_\_\_ 8 Amp. Hr. (\$34.95) \_\_\_ 5.5 Amp. Hr. (\$32.95) \_\_\_ 2.6 Amp. Hr. (\$29.95)

\_\_\_ Universal Charger (\$11.95)

TERMS: Check, Money Order, Visa/MC, U.S. Funds only

Add \$4 to total for freight.

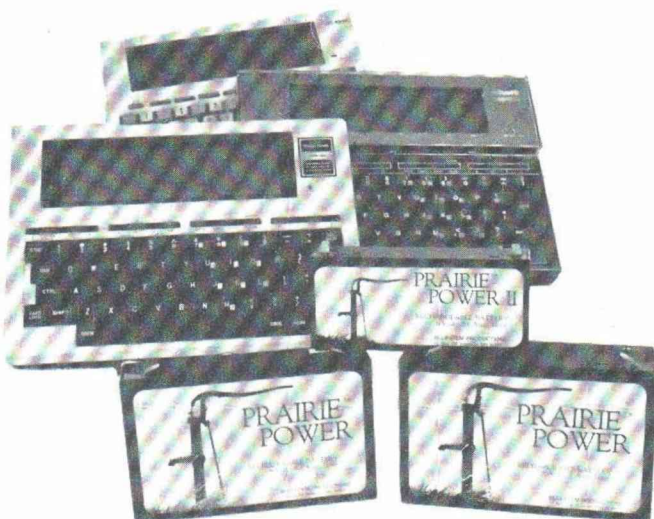
Name \_\_\_\_\_

Phone \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ St \_\_\_\_\_ Zip \_\_\_\_\_

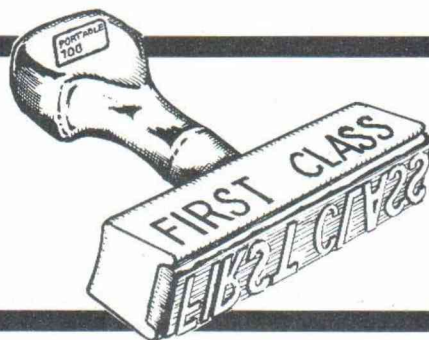
\_\_\_ VISA \_\_\_ MC # \_\_\_\_\_ Exp. Date \_\_\_\_\_

Signature \_\_\_\_\_



Left to Right: Prairie Power 5.5, 2.6, 8.  
Front to Back: Tandy Model 100, Olivetti M10, NEC 8201A.

# MAIL.100



*Editor's Note: In addition to letters from our readers, we also include in Mail.100 letters from CompuServe and The Source. Those message writers are identified by their CompuServe (CIS ID) and Source (STC ID) identification numbers.*

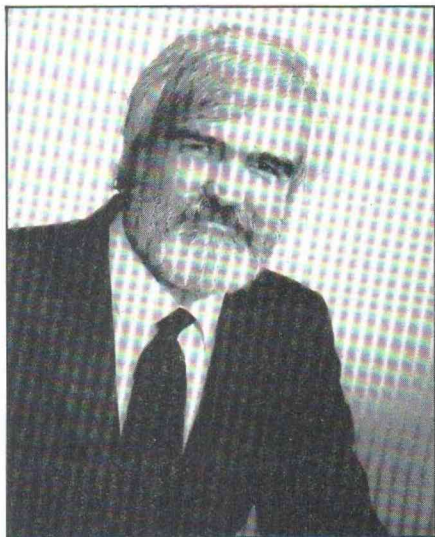
## WHO'S BEHIND THE BEARD?

I was flipping through the July 1984 issue of *Portable 100* and came across your Mail.100 letter on Burl Ives. I did a double take. He looks exactly like Sam Redman from Portable Computer Support Group!

If the Model 100 fanatic from Raleigh was confused, then think about the confusion now. Could it be that Sam actually is Burl, or even (GASP!) moonlighting as Traveling Software's Traveling Professor? The possibilities of a trio boggle the mind.

Can't you see them getting together to sing the merits of the Model 100 in three-part harmony? I think that'd even be better than Box Car Willy. I don't know if they'd sell any records, but Model 100 sales might go up.

Another Model 100 Fanatic  
College of Wooster  
Wooster, OH



► As a service to our readers, we've published photos of Sam, Burl, and the Professor. We'd like to add that while our fanatical friend says he hails from Wooster, OH, his letter was postmarked Dallas, TX. The Portable Computer Support Group is located in Dallas.

—Eds.

## TANDY BEEFED UP

Tandy has had a lot of attention from the press lately. There's been good news and bad news. Some of what has been written is true, but some is highly inaccurate. For purposes of background information, I'd like to give you our view of our activities, and our position in the computer marketplace.

Radio Shack built its reputation in consumer electronic goods . . . entertainment products. And that's still the primary business of our traditional full-line stores. That identity has overshadowed our strong presence in a very different arena.

For six years, we've been building a second marketing organization, geared to the distribution and support of business products: the Radio Shack Computer Centers and Telephone Centers. These outlets have their own product lines, business products management

team, computer merchandising group, dedicated technical support, customer service and repair functions.

Also included is our Education Division which deals with the special needs of schools using computers. This separate distribution system is gaining visibility and building awareness that we're truly in the business of high technology.

And we know how to make that technology affordable, while maintaining high levels of quality.

We're always moving forward. We're into new markets, like cellular radio, digital audio, beta Hi-Fi. We've initiated an "Advanced Technology Series" to showcase the cream of our product crop. We've completed the structuring of our business products management group. You've seen some distinct changes in computer advertising . . . look for more.

Future computers will carry the Tandy brand name. We've about doubled our computer customer service staff. We've been beefing up repair services and marketing representative training. New products are in the chute, which will establish new standards of price-performance.

While the folks at Apple are producing extravaganzas and jazzy features, and IBM is protecting its Fortune 500



# Micro Demon brought you three sensational programs...

## Here's four more!



### PRO AID, DASM & Music

**PRO AID** - Still our number one product. PRO AID is a machine language program that adds many powerful features to your model 100. You get 26 new, easy to define, super function keys that can be used in TEXT and TELCOM as well as BASIC. You also get automatic line numbers, instantaneous deletion of any range of BASIC lines, a special calculator mode with new BASIC commands, immediate access to MENU programs, a program status key, and much more. PRO AID uses less than 1.8K of your memory, and can be located anywhere there is room. PRO AID comes with complete documentation.

**DASM** - A full featured disassembler. You can easily follow the logic of a program that contains many jumps and calls. During the disassembly process, you can inquire about such things as contents of memory, and the keyword for a given token. The latest version has a split-screen feature that allows you to review the previous 8 lines of disassembly.

**Music** - Using a modified SOUND routine, it becomes possible to hold a tone as long as a key is held down. This makes it possible to turn the model 100 into a musical instrument.

**1 ASM - A Powerful 8085 assembler.** ASM contains all the features you expect in an assembler as well as several features that are specific to the model 100. For instance, there is a built-in macro library that will simplify writing code. Among these macros are relative branch instructions for programs intended to be called from BASIC. ASM comes with extensive documentation, including lots of information on the ROM.

Example programs will help the novice get started with machine language programming. The perfect way to learn about machine language.

**2 TEL PRO - A TELCOM enhancement.** With TEL PRO you can remain connected to the phone line and still read the menu, kill files, read text files, upload BASIC programs (with .BA extension), download the screen, access the time, set an alarm, delete unwanted carriage returns from downloaded BASIC programs, and more. An excellent companion program for PRO AID.

**3 Questn - Artificial intelligence with a sense of humor.** Ask this program any question, and it will respond with a relevant, often humorous reply. Philosophical and personal questions are the best. A nice program to show off your computer. Requires at least 24K memory. Questn comes with a list of questions for those who have trouble thinking of something to ask.

**4 Napoleon - It's you against the computer.** In this card game from England, each player gets a bid and the high bidder tries to make his contract. The computer makes a worthy opponent. You can choose the computer's style of play.

Send mail orders and requests for information to Micro Demon, Inc., P.O. Box 50162, Columbia, SC 29250. Visa and Mastercard are welcome. Or, call our 24 hour order line, 803-733-0980.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Signature \_\_\_\_\_

Card Number \_\_\_\_\_ Exp. Date \_\_\_\_\_

Quantity	Product & Price	Total Price
	Pro Aid (\$39.95)	
	ASM (\$69.95)	
	Tel Pro (\$49.95)	
	DASM (\$29.95)	
	Questn (\$29.95)	
	Napoleon (\$29.95)	
	Music (\$19.95)	

**MICRO  
DEMON, INC.**  
P.O. Box 50162

Paying by:

- ☐ Visa  
☐ Master-Card  
☐ Check

Total Cost of Items: (SC Residents Add 4%)	
Shipping & Handling (Overseas is Extra)	\$1.50
<b>Total Amount Due:</b>	

turf from AT&T, the Tandy team is working on practical ways to get the job done better, faster, and less expensively.

We've the most complete line of personal computers, the largest chain of computer centers, the largest library of manufacturer-supported software, the largest network of manufacturer-owned and operated personal computer repair facilities, the largest group of customer training centers, the largest selection of peripherals, accessories

and supplies, and the best support offered by a personal computer manufacturer.

Ed Juge  
Director of Market Planning  
Tandy Corporation

### FUNKEY WRONG KEY

In reference to Jesse Bob Overholt's article, "Funkey Stuff", July 1984

issue of *Portable 100*, in line 51050, the PRINT@280 should read PRINT@315 to label "Menu" over the [8] on the screen.

Also, to allow the space bar to have the same effect as the right-arrow key, change two lines as follows:

```
140 CC$=CHR$(29)+CHR$(28)+
CHR$(32)+CHR$(30)+CHR$(31)+
CHR$(13)
330 PRINT@240,CL$;:ON CCGOSUB
400,500,500,600,700,800
```

The variable CC\$ now will contain the ASCII values of the four arrow keys, the enter key, and the space bar. The space bar now functions identically to the right-arrow key, just as in the normal menu.

Michael Shrout  
Greeley, CO

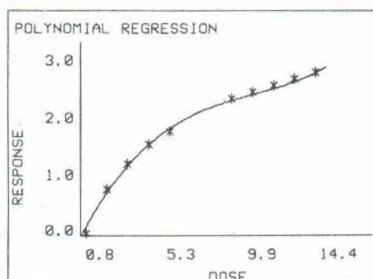
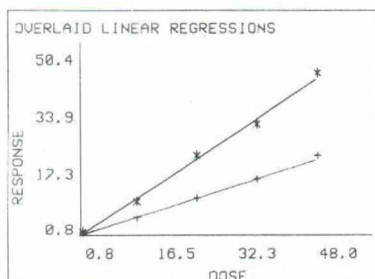
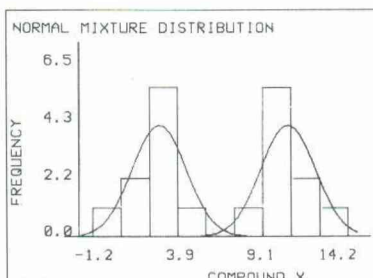
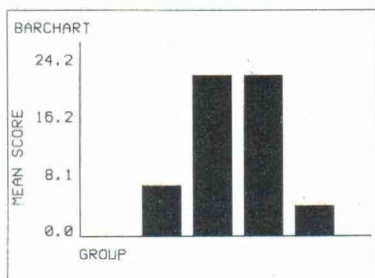
# The Portable Statistician

Software package to make your Radio Shack  
Model 100 and CGP115 color plotter  
into a portable statistics/graphics workstation.

#### Features:

- Descriptive statistics
- t-statistics
- One-way, two-way ANOVA
- Repeated measures ANOVA
- Linear regression
- Nonlinear regression
- Multiple regression
- Chi-square
- Mixture analysis
- Histograms
- Scattergrams
- Barcharts
- Line charts
- Linear plots
- Nonlinear plots
- Normal dist plot
- FISHER's exact test
- YATES correction

ONLY  
\$99<sup>00</sup>



Also available for IBM PC and XT

TRS-80 is a registered trademark of Tandy Corporation

IBM is a registered trademark of International Business Machines Corporation

Works with 32k or 24k versions

#### Statware

7413 Lake Street  
Morton Grove, Illinois 60053  
312/248-8836

### DEFUNCT MAG SUBS MADE GOOD

*Editor's Note: Many months ago, Portable 100 began negotiations with the publisher of Briefcase Portable. One of the terms on the table during those negotiations was Briefcase Portable subscribers would receive Portable 100 instead of BP. For a variety of reasons, those negotiations broke down. However, the publisher of Portable 100, James S. Povec, has offered to fulfill Briefcase Portable's subscription liability at no cost to the magazine's subscribers.*

Your statesmanship in providing Briefcase Portable subscribers with a free subscription to your own magazine is commendable. As a businessman I also applaud your acumen. I hope it pays off for you.

Ed Scholz  
Sitka, AK

### TWO IDEAS TO CHAT OVERSEAS

Neither Western Union nor Radio Shack appears to realize what a powerful combination they have in the form of the Easylink service when used with the Model 100. The advertising for Easylink makes it sound like just another electronic mail service, but I'm finding it has a unique advantage — the interconnection to telex worldwide.

Electronic mail makes sense for close-knit groups of people sending and receiving messages among themselves with similar equipment and within the United States. But for sending and receiving from differing pieces of equipment sent to different communications protocols it isn't worth the trouble. And because of different standards (Bell vs. CCITT) in telephone modems overseas, and poor quality phone lines outside the United States, most electronic mail won't work internationally.

Western Union's Easylink has the enormous advantage of compatibility with the long established and standardized worldwide telex system. It gives you a telex number (in addition to a mailbox number) so that people anywhere in the world can send you messages using their equipment. And you can send messages out to people who have telex equipment to receive on. This overcomes the problem of having to ensure you have the compatible protocols and communications. You simply use the old familiar telex number.

The Model 100 with its built-in modem is an ideal machine to use with Easylink. On the move you can dial in from anywhere there's a phone and pickup messages sent to you. There's no need to give people an itinerary of where you'll be. They can get you through the 100 plus Easylink.

It should be said, however, that Western Union people aren't well-informed or helpful to 100 owners. For starters, I was given the wrong terminal type coding for my identification code (the right code is "17").

I haven't received my first month's bill yet, so I don't know how expensive the service is... but it's easy.

Peter Samuel  
Washington, DC

The main problem was the 100 wouldn't do a line feed. After several calls to Radio Shack, nobody could offer a solution, so we gave up. The only way to get a line feed was to write our message immediately after the auto log-on procedure. This was a hassle!

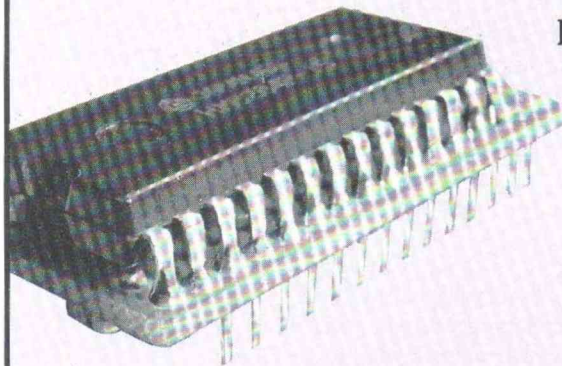
We called the folks at Portable Computer Support Group and they were able to offer a simple solution. If you PEEK 63066 you'll find this value is 0. The solution is to POKE 63066,255. Now we can compose our message in

the Text file and upload from RAM. We get a line feed automatically every time we hit the enter key. It sure would have been a lot easier if Radio Shack had designed it like that in the beginning.

Anyway, I'm sure somewhere there's someone else in the same situation. A thank you to the people at Portable Computer Support Group.

Robert C. Kizer  
Houston, TX

## FOR THE RADIO SHACK MODEL 100 OLIVETTI M10 NEC PC-8201A



### 8K MEMORY MODULES

*Designed  
for the  
Briefcase  
Portables*

- ★ Low Power CMOS Design
- ★ Simple Installation (Instructions Included)
- ★ 30 Day Satisfaction Guaranteed or Your Money Back
- ★ 1 Year Warranty
- ★ Memory Test Program Available — Only \$15<sup>00</sup>
- ★ Prompt, Next Day Shipment — Via UPS  
(Shipping & Handling Included in Price)

#### SPECIAL SHIPPING

Free UPS surface within USA — Add \$4.00 for UPS 2 day Air — Add \$7.00 for  
Canada — \$15.00 for all other Foreign delivery.

*Dealer Inquiries Welcome*

**\$49<sup>95</sup>** 8Kx8  
CMOS/RAM

— Special Offer —  
(with purchase of a memory module)  
No frills direct connect Modem Cable - \$9.95

### PACK A PURPLE IN YOUR PORTABLE!

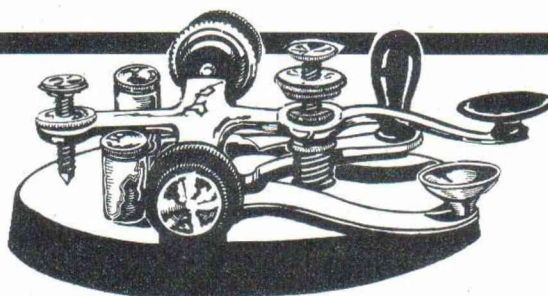
Purple Computing • 2068 Ventura Blvd • Camarillo, CA 93010  
Toll Free (800) 732-5012 Calif Only — (805) 987-4788

☐ NEC PC-8201A ☐ OLIVETTI M10 ☐ RADIO SHACK MODEL 100

Product	Quantity	Cost	Price
8K Memory Module	_____	\$ _____	includes
Modem Cable	_____	\$ _____	postage &
			handling.
			Shipped
			from stock.
		CA Residents only, 6% tax	
		<b>Total Cost:</b>	\$ _____
<input type="checkbox"/> Check <input type="checkbox"/> Money Order <input type="checkbox"/> VISA <input type="checkbox"/> American Express <input type="checkbox"/> Master Card — Acc't. # _____ Exp. _____		Signature _____	
Name _____			
Address _____			
City _____ State _____ Zip _____			

**W**e operate a small import business and occasionally need to communicate with our suppliers overseas. In the past we'd send telex messages by Western Union. To own our own telex machine was too expensive for our low volume. Then we discovered that ITT offers a telex service to owners of personal computers and word processors. This is why we bought the Model 100. But it wasn't as easy as we thought.

# THE WIRE



## ON THE SOAPS

### COMPUTER LITERACY COMES TO THE SOAPS

By Connie Passalacqua

**T**he stereotype of a soap opera character is a middle-aged woman who cries incessantly to her neighbors in seemingly endless scenes about the philanderings of: her husband, son, daughter, dentist, or all of the above, using only a coffee mug as her prop to catch the tears.

No longer.

The Model 100 is the new *star* of a daytime soap, and not as a mere prop either.

The 100 is a working member of the cast of CBS' *Guiding Light*, and belongs to the newest member of the series, Jonathan Brooks. A 12-year-old college graduate, Jonathan has arrived in the town of Springfield armed with four microcomputers to help him search for his real parents.

His hacker vocabulary is a bit of a mystery to *Guiding Light's* largely computer illiterate audience, but those behind the scenes at the soap are computer enthusiasts who are determined to educate their viewers.

Says Producer Steve Evans, whose personal interest in the subject most directly led to Jonathan's storyline: "We knew Damion (Scheller, the actor who plays Jonathan). We were inspired by many of the computer stories we'd seen in movies lately. And we loved the notion of kids using computers to solve problems."

Evans said that starting a year ago, the show had used computers to "dress" several office sets. "I thought they would look more authentic if we had computers on display. Then we asked ourselves if we have them, why don't we use them? So we did, as parts of small storylines."

When the Jonathan storyline came along, Evans wrote to several companies seeking a promotional agreement. Apple responded. Jonathan's main computer, dubbed Herman, is two interconnected Apple IIIs, with a voice synthesizer. (The voice actually is supplied by an off-camera actor.) Jonathan's larger computer, Charlie, really is a Lisa. But his Model 100, named Gussie, will be the computer most prominent in his parental quest.

"We chose the Model 100 because it fits easily into several situations Jonathan will find himself. All of his work can't necessarily be done at home in his lab."

Gussie made her debut on *Guiding Light* rather humorously. Jonathan is a persnickety 12-year-old, given to lecturing on the necessity of a vegetarian diet and reading books only someone with his genius IQ can understand. In her first

scene, Gussie's display was shown in a camera close-up: "No junk food. No comic books. No baseball playing." Gussie, we're led to suspect, knows Jonathan quite well.

In reality, Gussie and the other computers are programmed by Roy Coons, a 17-year-old whiz kid who was hired especially by the shop for this storyline. The son of a staffer for *Guiding Light*, Evans says Coons was chosen because "I wanted someone who had the time to work with us and answer Damion's questions."

Damion, whose freckled nose crinkles when he's referred to in his publicity as a computer whiz, is actually more into acting than computers. Having just entered the ninth grade at a prestigious New York private school, this is his third soap role. He already is a veteran of Broadway, two movies, and dozens of commercials.

He does, however, like computers. "Usually when I play a role the character's interest becomes mine," he says. Hence, Damion's current leisure reading is the Apple III manual, the computer he's determined to learn to use first.

Considering the actor's quick learning abilities, which enable him to memorize many of Jonathan's lines, about which he says "some . . . are so technical I don't know what I'm saying," learning the technicalities of a Model 100 should be a snap. ◀

## IN THE NEWSROOM

### 100 BECOMES CUB REPORTER FOR DAILY

By Jennifer Petkus

**T**he city editor took a wild guess and pressed a button on the Radio Shack Model 100. Nothing happened. After several minutes he called the newspaper.

"No, we didn't get your story," he was told.

Undaunted, he tried again. He found, however, that the column he'd written at home on his day off had disappeared from the main menu. He was . . . annoyed.

He'd had no way of knowing, short of reading the instructions, that pressing download instead of upload would not send his story and worse, would erase it from memory.

The *Colorado Springs Sun* is a 42,000-circulation daily paper in one of the fastest growing high-technology areas in the country. It was not only inevitable but necessary we enter the microcomputer revolution.

The *Sun* bought six 100s in January 1984, five with 16K and one with 24K. Of those, one is used by the associate editor to write columns, two by the sports department, two by the news staff, and the 24K machine is for general use.

continued on page 18

# FAST CASSETTE STORAGE

for only \$19.95

TRAVELING SOFTWARE  
is **NOW** available  
at your local  
Radio Shack Store  
by Express Order.



## T-backup<sup>TM</sup>

for your TRS-80 Model 100, NEC PC-8201, or Olivetti M10

- Saves the entire contents of your computer to cassette tape including all BASIC, TEXT, and Machine language files. T-backup even saves itself and the TEXT and BASIC buffers!
- T-backup works with any size memory from 8K-32K.
- Date, time, and a comment entry are stored with each T-backup to provide a convenient cataloging system.
- Fast and small — T-backup takes only 2200 bytes of memory and transfers 32K in about four minutes! T-backup will pay for itself in time saved the first time you use it.
- Provides a convenient way to move between different applications programs. Almost like having a portable disk drive!
- T-backup computes a "checksum" to allow for the verification of a transfer to cassette to ensure you information was saved successfully.

TO ORDER T-backup<sup>TM</sup> OR FIND THE DEALER NEAREST YOU:  
call toll-free

**1-800-343-8080**



11050 Fifth Avenue NE  
Seattle, Washington 98125  
(206)367-8090

Circle No. 13 on Reader Service Card

# IF THEY'VE BEEN GOOD...

**GIVE 'EM A COLOR COMPUTER 2  
AND SAVE \$20**



## **16K Extended BASIC**

**139<sup>95</sup>**

26-3136

Reg. 159.95

USE YOUR  
CITILINE CREDIT

## **16K Standard BASIC**

**99<sup>95</sup>**

26-3124

Reg. 119.95

### **Have a Colorful Christmas**

A perfect gift for the whole family that will keep on giving for years to come! The Color Computer 2 is ideal for anybody who wants to enjoy games in a system that can be used for many other household, business and educational tasks. It's great for beginners who want a computer to learn on—but won't limit them later on. And it's perfect for hobbyists who want a full-featured system with the opportunity for advanced graphics and programming expansion.

### **Ready to Use**

Just attach the Color Computer 2 to any TV. Our "pop-in" Program Pak™ cartridges let you battle starships in outer space, run a maze, play baseball—and lots more. But playing games is only the beginning. You can set up a budget or monitor your investments. Your kids can learn math or typing, enjoy literary classics or make glorious computer "paintings"

### **Want to Learn to Program?**

Our entertaining instruction manuals will have you writing programs with color displays and sound in no time. Color BASIC's simple commands let you quickly produce drawings, diagrams and charts. Choose from eight brilliant colors, create musical tones, solve problems, analyze data and much more.

### **Choose the Color Computer That's Right for You**

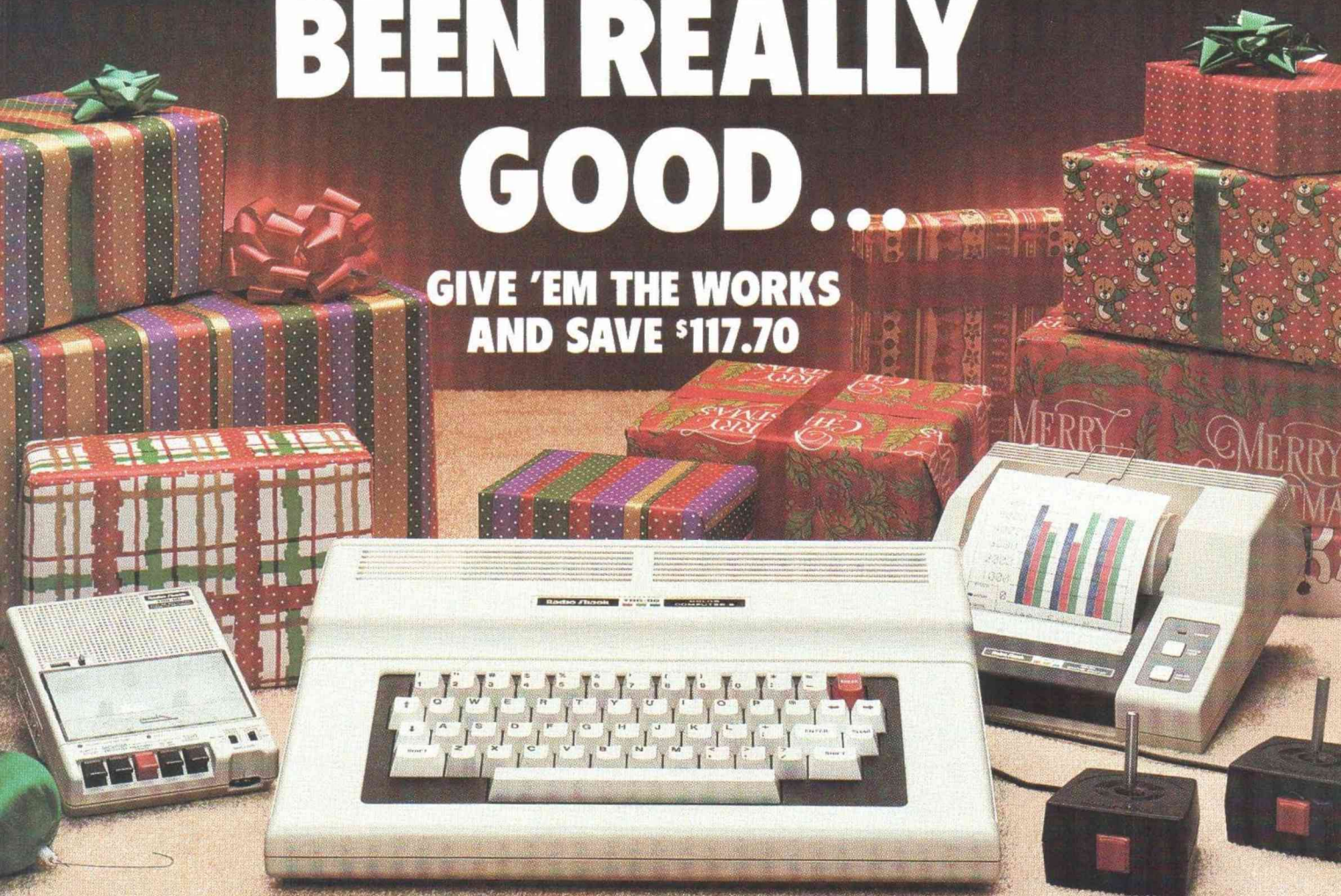
The 16K Color Computer 2 with the Standard Color BASIC language is perfect for beginning programmers. An entertaining 185-page learning manual is included. Or pick the 16K Color Computer 2 with Extended Color BASIC for advanced programming capabilities. Create high-resolution color graphics using simple one-line commands. You can even choose the Standard version and upgrade to Extended BASIC later on.

### **Expand Easily**

Your Color Computer 2 can grow with you, too. Add a pair of joysticks, a printer and a modem for telephone communications. Upgrade with more memory and up to four disk drives, too.

# IF THEY'VE BEEN REALLY GOOD...

**GIVE 'EM THE WORKS  
AND SAVE \$117.70**



## **Complete System**

# **299<sup>95</sup>**

Reg. Separate Items 417.65

**AS LOW AS \$27 PER MONTH  
WITH CITILINE CREDIT**

## **Get Super Holiday Savings On This Versatile System!**

Save big when you get this perfectly matched Standard Color Computer 2 system, with advanced color graphics printer and cable, cassette recorder, joysticks and educational programs!

## **Get Beautiful Color Printouts in Seconds**

The ultra-compact CGP-115 Color Graphics Printer lets you create a variety of graphic designs from charts to computer-generated "doodles." The CGP-115 uses easily replaceable ink cartridges to

print in brilliant red, blue, green and black on 4 1/2" wide paper. Drawing and plotting are simplified with CGP-115's built-in commands.

## **Save Programs and Data on Cassette Tape**

The CCR-82 recorder is especially designed for loading and recording programs and data. The CCR-82 features a volume control with a pre-set marker that makes it easy to find the right setting, time after time.

## **Increase Your Children's Vocabulary Skills**

You also get our popular Vocabulary Tutor programs on cassette tape—the fun way to learn new words. Kids in grades 3-5 can match words with their definitions and place the words in appropriate sentences.

## **Come in Today!**

Take advantage of either of these super holiday offers at your local Radio Shack. A Color Computer 2 is one present that will pay off in the future—for everyone in the family!

**Radio Shack®**  
**The Technology Store™**

A DIVISION OF TANDY CORPORATION

**New 1985 Computer Catalog. Send me a free copy.**

Mail To: Radio Shack, Dept. 85-A-867  
300 One Tandy Center, Fort Worth, Texas 76102

NAME \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_  
STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
TELEPHONE \_\_\_\_\_

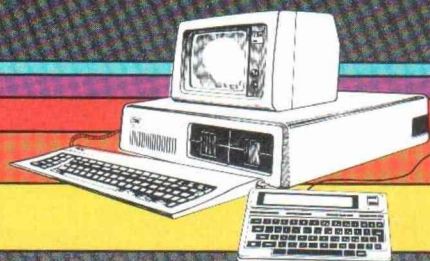
Prices apply at Radio Shack Computer Centers and participating Radio Shack stores and dealers. Offer good from 10/15/84 through 12/31/84.  
Circle No. 14 on Reader Service Card

**FILES TRANSFERRED INSTANTLY** from your **MODEL 100**

to: TRS-80 MODEL 1, 2, 3, 4, 12, 16, 2000. COLOR COMPUTER • IBM PC, XT, AT • COMPAQ • CORONA  
APPLE IIe, IIc, II+ • EPSON QX10 • KAYPRO • OSBORNE • XEROX • CPM COMPUTERS **using**

# DISK +

Available on a  
snap-in ROM chip



NOW your MODEL 100, plus your other computer is an instant disk system

**FINALLY!** Use disk storage with your Model 100

**SIMPLE!** Transfer any file (Text, Basic, Machine Code) with a single function key

## IT'S SO EASY!

Simply place the disk in the disk drive and power it up. Place cursor on DISK + on your Model 100 menu and press enter. You are shown the disk directory on your Model 100 screen. You transfer any file from RAM to disk or disk to RAM with merely a single function key. **INSTANTLY!**

## FULL ERROR CHECKING!

Guaranteed integrity of all data you transfer. Every line transmitted until verified, at 19,200 Baud, 10K bytes in 5 seconds!

**Files transferred instantly with a single function key.**

## COMPATIBLE!

Model 100 Files instantly usable on IBM and vice versa.

Also IBM, Apple, CPM cross compatibility.

**DISK + \$69.95** Includes cassette, disk and excellent manual!

CALL 1-840-00 — or use RS232C with null modem

MC, VISA, or C.O.D.

# PORTABLE COMPUTER SUPPORT GROUP

11035 Harry Hines Blvd. No. 207, Dallas, Tx. 75229

# NEW PRODUCTS



**S**am Redman of the **Portable Computer Support Group** is always ready to gab about his company's new products. Lately, he's been talking up a storm about **Lucid**, PCSG's machine-language spreadsheet for the Model 100.

Hailing from the East as we do, it's not always easy to tell when a Texan like Sam is crossing over the line between metaphor and hyperbole. He says **Lucid** is better than **Microsoft's Multiplan** and has features even **Lotus 1-2-3** doesn't have.

**Lucid** is so exciting, Sam told us, his printer, after reading the galleys for the product's brochure, said he was going to buy a Model 100 just so he could buy the ROM-based spreadsheet.

Redman's firm also has been working at a breakneck pace to be the first in the market with a **portable disk drive** for the 100. Optimistic estimates pegged the drive's entry into the market in May; however, when we last spoke to Sam, he felt the drives wouldn't be rolling out PCSG's doors until October 1.

That date's right about the time **Holmes Engineering** of Salt Lake City, UT, expects to be shipping its portable disk drive, **The Chipmunk**.

A major difference between the drives is price. The **Chipmunk** sells for \$499.95, while the PCSG drive sells for \$599. Another difference is the **Holmes'** hardware hitches up to the 100 through its expansion bus, while the PCSG device enters MEWS through the RS232 port.

The bar code port is the target of software developed by **Optical Data Systems**. Optical's program, **Strype Byte 100**, allows you to print the three bar codes (UPC-A, 3 of 9, and Plessey) supported by Tandy's bar-code software.

The Escondido, CA, firm's offering allows variation in the code's size so it can be printed on labels or forms.

Only an 8K Model 100 is needed to run the \$49.95, machine-language

software. *Portable 100* has an evaluation copy of this bar code-generating program and will run a review of it in a future issue.

Move over **Prairie Power**! Another vendor has entered the MEWS power market. A company called **ARMS**, currently producing a product called **Workstation-100**, is offering a 12-hour power pack for MEWS dubbed **Power-100**.

According to ARMS honcho Al Beverly, the \$29.95 power pack weighs about five ounces and attaches to the 100 with Velcro.

An obvious advantage this Midlot-hian, VA, firm's product has over its competitor is **Power-100** uses the 100's standard AC adapter to recharge itself. With **Prairie Power** (reviewed in our June issue), a separate charger is needed.

Recently Mark Epley of **Traveling Software** swung by Camden while making an East Coast business jaunt. After a first-time bout with one of our Maine lobsters, he dropped off a copy of his latest product **T-backup**.

For 100 owners without the scratch for a disk drive or **Holmes' Bullet** wafer drive, this \$19.95 product provides an easy way to dump all their RAM files to cassette tape.

The RAM dump takes about 4 minutes and the machine-language program has its own verification routine to ensure what's stored to tape can be read back from it.

In keeping with its policy to support all **Kyocera** machines, **Traveling** also makes **T-backup** for the **Olivetti M 10** and **NEC 8201**. Backup time on the NEC is slower since its cassette interface works at 600 baud, while the M 10's and 100's works at 1500 baud.

Speaking of **NEC**, **TouchBase Design** in Los Angeles has developed an **internal modem** for the **8201** selling for \$129.

In a letter to us from Nancy Wolfe, **TouchBase** says, "We believe this product is both unusual and important,

standing out from hundreds of new products appearing weekly."

Readers should be aware, though, that while this modem salves a sore spot in the 8201's specs, be prepared for some hardware hacking. Here's a brief description, provided by **TouchBase**, on how to install its modem:

"[Y]ou must remove the four screws that hold the top and bottom of the case together.

"While the top and bottom parts lay apart, side by side, the modem, completely insulated and protected, is laid inside, and six small clips are attached to clearly visible and reachable points."

Also, installing the modem will void your 90-day NEC warranty.

Looking for some on-line business programs? Seven programs for the Model 100 are being offered by the **Real Estate Information Network** in Nyack, NY. It costs \$20 to join REIN and \$4.50 an hour once you're on the system. Sysop James Clyde (800-453-1879 ext.A358) can give you more information about the system.

With more and more journalists using computers, you'd expect someone to aim a "book" at reporters, many of whom are using 100s. In these trying times for computer magazines, it's highly appropriate the publisher of **News Computing** is an *intentional* non-profit organization.

The magazine is published by New Computing Inc., a student-faculty corporation founded by Clark Edwards, assistant professor of journalism at the **University of New Mexico** in Albuquerque.

Cryptogram addicts will love our final item this month. **Cryptease** stuffs a 16K Model 100 with more than 600 sayings to be jumbled and decoded by cypher buffs. That, according to **MAK Ltd.** in Spring City, PA, is equal to two years of daily newspaper puzzles. If 600 sayings aren't enough, more can be added to the \$29.95 program by typing them into a document file. ◀

continued from page 12

As the night city editor and the "microcomputer expert" at *The Sun*, it was my job to choose the 100 and help the reporters and sports writers learn to use it.

At first there were the usual problems; many were solved by realizing no one was going to take the trouble to read owners manuals. Unfortunately, for well-educated, intelligent people, idiot-proof instructions often are necessary, as is endless repetition on how to kill stories and change communications stats. The biggest obstacle however, has been in getting reporters to use the computers.

To date, the sports writers have gotten the most use out of the 100s. Jeff Metcalfe, sports editor at *The Sun*, said, "There's no question the Model 100s have made our job easier, both due to their ease of usage and portability. They fit easily into a briefcase or suitcase and make traveling that much simpler, something we're always looking to do."

The 100s find their heaviest use when the sports writers travel from Colorado Springs to Denver to cover a Broncos or Nuggets game. They also serve duty as extra terminals for the sports department when the regular terminals are being used.

Managing Editor Robert Franken agrees the 100s are very useful. Asked if the 100 is worth the money, he replied, "Labor is the largest expense category in any newsroom. If we can save a reporter's time, we are saving money, and it adds up in a hurry."

"Often, a reporter is stuck at the scene of a news event — at a four-hour city council meeting, for example, with a couple of 15-minute breaks here and there. That's not enough time to get back to the office and write a story, but it is enough

time to write one on the 100 and either feed it back by phone or bring it back all written once the meeting adjourns.

"It's also saving our court reporter several hours per week. Instead of returning to the newsroom at the end of the day and trying to find a free editing terminal at the busiest time of the shift, she can write the stories in her courtroom office during the day." (Interestingly, the court reporter only began using her 100 after the reporter for another newspaper got one.)

"So, given the tax depreciation benefits and the time savings, the 100s are well on their way to paying for themselves in reduced labor expenditures and increased productivity."

For the news staff, the 100s came in very handy covering President Reagan's address to the 1984 graduating class of the U.S. Air Force Academy. "The Model 100s were a god-send," Franken said. "We've always used portable terminals in sports to cover games, but the Model 100s are a great improvement because of their smaller size and weight and . . . use with batteries."

Stephen Bobbitt, city editor, said the 100s allowed him to use his small news staff to cover a very large event: "They made the writing and reporting of the graduation flow much smoother than if all my reporters had had to come back to the paper to write their stories."

"As it turned out, many of the reporters who began the day at 6 a.m. were able to leave work by 2 or 3 p.m. with their stories written and across to the city desk."

This is all good stuff so far. The managing editor, sports editor, and city editor, all support the 100. Everyone admits they've been useful. What remains as a problem, though, is

# PortaPac™ 100



**Priced at \$325.00 - 60K RAM**  
**\$395.00 - 120K RAM**  
**\$465.00 - 180K RAM**  
**\$535.00 - 240K RAM**

The PortaPac 100 is a solid state mass storage RAM disk for portable computers. Featuring its own operating system Porta Pac 100 communicates through the RS232C. It is portable thanks to memory backed by an internal rechargeable battery. The unit will recharge or operate from an AC adapter (included), automobile cigarette lighter\*, or extra external battery\*.

The PortaPac 100 can transfer files or programs to micro computers including those using MSDOS or CP/M. Up to 32 files can be stored per 60K of RAM. The lessor memory models can be expanded to 240K.

\*optional

Please Send For Descriptive Literature

Registered Trademarks:  
 CP/M - Digital Research



## Cryptronics, Inc.

11711 Coley River Circle, Suite 7  
 Fountain Valley, CA 92708  
 Phone: (714) 540-1174

the 100s aren't being used beyond their electronic notebook function. Most reporters will admit the 100 is good for entering and sending text to *The Sun's* computer — but not for editing functions such as moving blocks of text or search and replace.

Bobbitt said, "I personally find it difficult to find fault with the 100. The only drawback I can think of is the command functions to allow editing are difficult for me to use since I do most of my work on a full-size word processor with a different command keyboard."

(Bobbitt had told reporters to write their stories on the 100s, but not to attempt any heavy editing on them. His opinion on that seems to be changing, however.)

The reason for this dissatisfaction with the 100 might be the hype which has been promoted about microcomputers in general. Many expect computers to understand plain English commands (or, at least, one-key commands), without requiring annoying information such as baud rate, parity, 7- or 8-bit word, or needing a quote mark when you type KILL COM-ISH.DO.

The microcomputer has been touted as the greatest boon to writers since the pencil, but no one ever explains that using a micro requires memorizing seven function buttons and an A to Z of control codes. It's not surprising, then, people happiest with the 100 are those ignorant of computers.

Explaining the move block function of the 100 to one person, I said, "See, this is just like on our computer." He said, "Oh, I never use that on our computer anyway." That explains a lot about his writing.

A corollary to the problem of not recognizing the 100's

possibilities is that many don't see it as a computer at all. For instance, one reporter asked if the 100 could be used as a calculator.

Other aspects wasted on the 100 are the ADRS and SCHDL functions. Those are never used except as a place to store the telephone number of *The Sun's* 300-baud port.

Another obstacle, sadly, has been the 100 itself. For us, they've had poor reliability. We bought six and returned one immediately because of a problem in TELCOM. A second machine was returned less than three months later. It wouldn't auto-dial and it took another month to repair.

Will this limited perception of the 100 change? Recently I bought a tape recorder for the 100 (which is quite picky). With a stock of programs lifted from the Model 100 Special Interest Group on CompuServe and other sources, I hope to show the newsroom what the computer is capable of.

Another assistant city editor is interested in using the 100 for a judicial sentencing series. He'd asked if I could write a program that could be used to tally sentencing records of judges (breakdown of convictions by ethnic groups and length of sentence), and then be able to update the information without recalculating each record. I told him about spreadsheets.

All things considered, the reputation of the 100 is changing. The quickest way to improve the situation would be if each person had a computer for his or her own use. That way each would have time to explore its possibilities.

To this, Bobbitt said: "I'd like to give one to each of my reporters and have him or her use the 100 on nearly every story, every day." ◀

## BE MORE PORTABLE

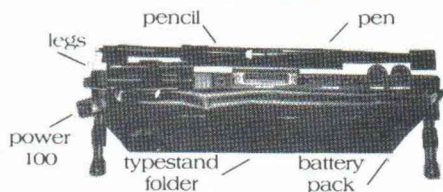
"The New WORKSTATION-100 now adds POWER-100"

### POWERFUL



- Power-100 provides power for approx. 9 hours.
- Recharge while still connected to computer.
- Recharge with regular AC adapter (no extra re-charger needed).
- Compatible with and enhances other external battery systems.
- Works with NEC's and Olivetti's.
- Pays for itself with savings on alkaline batteries.

### PORTABLE



- All WORKSTATION-100 components conveniently attach and detach using self-adhesive velcro—"They are there when you need them."
- Your computer will still fit in the original case—"As portable as ever."



Just \$45.95 for complete kit

### PRACTICAL



- POWER-100 gives power freedom without portability loss.
- Convenient TYPESTAND/CLIP-FOLDER stores papers, manual and business cards while improving typing efficiency.
- PEN and PENCIL set are always handy.
- SUPPORT LEGS are always ready when needed.
- BATTERY PACK stores four "AA's".

**CALL 1-804-794-6675**

or mail Order Blank to:

A.R.M.S.

12131 Old Buckingham Rd.  
Midlothian, VA 23113



Check  
Approp.  
Boxes

☐ Workstation-100  
Complete Kit  
(Save \$3.95) \$45.95

☐ Power-100  
\$29.95

☐ Support  
Legs \$3.95

☐ Typestand  
Folder \$7.55

☐ Mech.  
Pencil \$1.75

☐ Battery  
Pack \$3.95

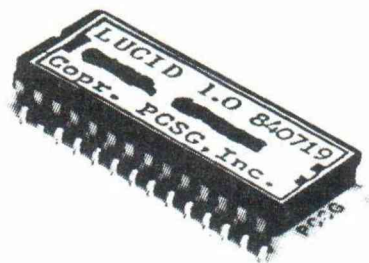
☐ Pen  
\$2.75

Please add \$1.00 Shipping & Handling (VA residents add 4% sales tax)

CHK., VISA/MC. # \_\_\_\_\_ Exp Date \_\_\_\_\_ Amount Enclosed \$ \_\_\_\_\_  
(Circle one)

Not only a spreadsheet, but a program generator as well.  
So good we sell it on a satisfaction guaranteed 30 day trial.

# LUCID<sup>®</sup>



*Appears on MAIN MENU like a built-in!*

on Snap-in<sup>™</sup> ROM. Takes no memory to store or for operating overhead. All RAM is available for data storage.

# IS HERE!

LUCID<sup>®</sup> is truly the spreadsheet plus. The result of a splendid, exhaustive research and development program to produce the fastest, most feature-rich spreadsheet for the Model 100 that gives you capabilities you cannot equal with Multiplan\* or even Lotus 1-2-3\*\*.

**\$149.95.** Call 1-800-641-4645, ext. 207 for free info pak.

**Portable Computer Support Group, Inc.**  
**11035 Harry Hines Blvd., #207, Dallas, Tx. 75229**  
**First with software for the Model 100. 1-214-351-0564**

# FULL-DUPLEX

TERRY KEPNER



*Editor's Note: Full-Duplex is dedicated to solving reader's Model 100 problems. Readers needing assistance should address their letters to Terry Kepner, P.O. Box 481, Peterborough, NH 03548. Readers are reminded to include a return address with all Full-Duplex correspondence.*

## DEFMODE

I have Radio Shack's "Horse Race Analyst 5-10" program which is for the PC-3 computer and it works in the DEF mode.

What is the DEF mode? Is there any way that I can load and run it in my Model 100?

My computer turns on the cassette recorder, but it displays code 51 Error, Bad File Number.

Antonio A. Carrasco  
Sanderson, TX

► The Model 100 can't read tapes written by the PC-3; the methods used to encode the data are incompatible. To get the program into the Model 100, you'll have to get a printout of the program on the PC-3, then type it into the Model 100. You may have to re-write part of the program to get it to work right on the Model 100.

The DEF mode on the PC-3 refers to a special feature of the pocket computer that lets you assign parts of a program in memory to the various keys of the PC-3 keyboard (pressing shift-A invokes one section, pressing shift-B another). You can get the same result by typing "RUN line number", but the DEF key mode is quicker. If the program uses less than seven defined keys, you could implement the same type of feature using the Model 100 function keys and the Basic command ON KEY GOSUB.

If the program uses more than seven defined keys (you'll want to reserve the eighth for returning to the Model 100

Menu), you can use a brief on-screen menu and use GOSUB to invoke the various sections of the program.

## MODEL I TO 100 PROBLEMS

I read the reply you wrote in the April 1984 issue of *Portable 100* addressing the problem of the Model 100 talking to the Model I.

Also, what is MEWS?

I bought Radio Shack's Videotex Plus, their cables and null-modem. The expansion interface for my Model I is an LNW built by me. The echo test you mentioned in your article works on both the Model 100 and Model I.

I've tried all kinds of combinations with baud, word length, parity and stop bit. The only combination that responds to anything is: 300 baud, 7-bit word, even parity, and one stop bit.

With this combination I can hold a key down and receive that character on the other unit. But if I touch-type, nothing but garbage appears on the other unit.

At other baud rates (faster), there is no response on the other unit.

I have a Model III and have hooked the Model I to Model III, and Model

III to Model 100 and they work great with the Videotex Plus. Help, please.

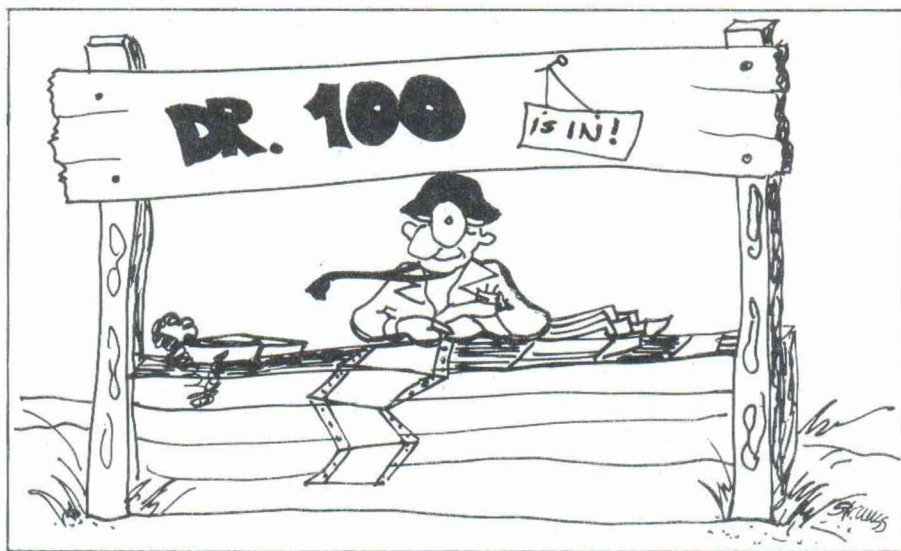
Tommy Walker  
Marion, SC

► MEWS stands for Micro Executive Work Station, which is Radio Shack's advertising name for the Model 100.

The earlier LNW Expansion Interfaces for the Model I computer uses hard-wired RS232 ports. If you want to alter the RS232 parameters, you have to take a soldering iron in hand to do it. That's why only 300, 7, 1, and even RS232 parameters work on your computer. When the unit was built that's what parameters were selected. The software can't change the hardware selection.

Since the Model 100 works fine with the Model III, the problem is obviously with your LNW interface. Get out your original construction instructions and documentation and double-check that the LNW is properly configured for what you want.

From your description (single letters work fine, touch-typing fails in both directions, but shorting the leads on the LNW end doesn't foul-up touch-typing), it sounds like the clock speed at



the LNW RS232 isn't right (of course the clock speed won't affect touch-typing when the LNW leads are shorted, the clock speed defines when it sends and receives, and it's always in-time with itself), but you'll have to contact LNW for a more exact diagnosis.

This doesn't explain why the Model III and Model I work properly together, but then again you're using Videotex Plus on both computers and that's probably helping a lot.

### TEXTHELPER UNCOOPERATIVE

**M**y first problem is I have tried to get the Texthelper program that was published in the September 1983 issue to run. Unfortunately it will not work with my printer, which is an "Axonix Thin Print 80" made by Axonix Corporation of Salt Lake City. When I try to run it, I get the header and then nothing else will print.

My second problem is I cannot find a way to upload text from my Portable

100 to SuperScripts on my Model 4. I have the procedure to upload from the Model 100 to regular Scripts on the Model 4; however, since I do not use that any more, it is a terrible inconvenience to go that way and then convert the Scripts to SuperScripts.

G. Carlton Hill, Jr.  
President  
The Brookside Savings Bank  
Kansas City, MO

► Does the computer "lock up?" Or does it act as if the printer is working correctly and prints the "document is printed" message? If you're getting a Basic OK prompt after the heading is printed, then you're missing a RETURN in the program section that prints the heading. The program should work correctly, since it isn't using any special printer codes that might mess up your printer. I presume that LPRINT and LLIST work normally, and that just this program doesn't work.

The best I can offer is to suggest you carefully inspect the program for typ-

ing errors and perhaps ignore the heading at first (put a REM at the line that jumps to the header printing routine) and try to get just the body of the text to print. Any other suggestions from anyone?

According to my Model 4 SuperScripts manual, you can easily convert ASCII text files to SuperScripts files by just selecting the "A" option in the main menu, followed by another "A" option, then the destination SuperScripts file name and the target ASCII filename. If you want the final SuperScripts file to have a specific format (not the defaults, in other words), you must first open a dummy document and define the formats you want. Then, when converting from ASCII to SuperScripts, use the dummy file name and the ASCII file will be copied to the dummy file.

Since you're operating in the TRSDOS 6 environment, you can use the built-in communications COMM program (with the \*CL and RS232 driver) to talk with your Model 100. As long as you don't use any special codes, the file sent from the Model 100 will be an all-



# Magic Mouse

## COMES TO THE MODEL 100!

SJI MAGIC MOUSE simplifies life with your Model 100. The business world can be a jungle--your Model 100 world doesn't have to be. SJI MAGIC MOUSE Provides you with a friendly computer environment that helps you avoid mistakes like accidentally erasing files or forgetting important appointments.

### MAGIC MOUSE SOFTWARE

- Mouse Calender** Shows day's agenda, computes days between dates and day of the week.
- Mouse Book** Searches ADRS.DO for names, addresses, and telephone numbers.
- Mouse Page Editor** Advanced page editor that displays 9-line by 60-column screen, and more
- Mouse Calculator** Gives your 100 powerful calculator capabilities.
- Mouse Draw** Create graphics or just doodle, and dump the screen graphics to a standard parallel printer.

### MAGIC MOUSE HARDWARE

Requires no modifications to your 100. Uses the RS-232C port leaving the parallel port free for printer use. Complete hardware includes Mouse, and dual channel, 7-bit analog-to-digital converter.

Magic Mouse Assembler Kernel saves RAM and speeds operations

**PRICE**  
**\$99.95**

Ohio residents add 5% sales tax.  
Check, Money Order, VISA, or Master Card.

**SWINDELL JUDY, inc.** Suite 349 4316 Dressler Rd., N.W. Canton, OH 44718 216-883-7504

ASCII file, easily read and converted by SuperScripsit.

### SCRIPSIT TO 100 TAPE

I have a Model III with 2 disks, 48K, and Tape and Disk Scripsit, and SuperScripsit. My son, recently graduated from high school, is thinking about getting a Model 100.

We would prefer text put on tape from the Model 100 could be later loaded into my Model III, while using one of the Tandy Scripsits whereupon he could then format it any way he wishes — for homework, notes, etc. We have not been able to do that.

We tried several times to load text from the Model 100 in ASCII format. For example, from the Model 100, onto its tape, F3 "cas:F", A was not able to be picked up on my Model III, in any of the Scripsits. (F was the single letter file name, in uppercase, and A was for ASCII.)

Is there a way out of this?

Dale Stupfel  
Dublin, CA

► Unfortunately, no one has developed a simple program to do what you want. While the two computers both store information on tape at 1500 and use the same technique to do it, the problem is that the Model 100 always puts a file-name header in front of its cassette files and the Model III doesn't. This is insurmountable without resorting to machine-language translation programs on both machines.

Since you have a full Model III with an RS232 board (I assume you have a standard Model III), why not just get a communications program such as Omniterm or MTERM for the Model III, an RS232 cable, and a null modem, and use the Model 100 TELCOM to transfer files from one machine to another? This is the basic procedure I use when writing my columns, and it's much faster than fiddling around with cassette tapes and all their inherent problems.

### CLOAD BUT NO RUN

I have a problem loading and running some cassette programs. I do the following steps:

lowing steps:

- Set up Basic;
- OK;
- CLOAD "PAYCHK", name program;
- Found "PAYCHK", displayed;
- ?IO ERROR, recorder and computer stop;
- OK is again displayed;
- CLOAD, Re-enter, for the rest of the program;
- Found "PAYCHK"; and
- OK.

Then the 21,446 bytes of 24K Model 100 is reduced to 18,483 after saving the program.

However, the program will not run. I sent the cassette for an exchange, and I have the same problem. What is wrong, and why does the computer and recorder stop when ?IO ERROR is found?

I loaded the ESS 22 electronic spreadsheet, and the RPA Calculator programs. They work fine.

If the number of bytes is reduced when loading a program, does this

# ALL NEW! from Polar Engineering and Consulting ROM 2

## MACRO Assembler

NEW•Macro definition and invocation with symbolic arguments

NEW•Conditional assembly code blocks

Expression evaluation: parens, +, -, /, \* and binary shift operators (NEW!), also binary, decimal, hexadecimal, octal, ASCII constants and labels

NEW•Label table retained for symbolic debugging

## SYMBOLIC Debugger

NEW•Full assembler expression evaluation (including labels)

NEW•Interactively patch machine code

Interactively execute 8085 instructions

Trace program simulation

Single step plus six other simulation modes with repeat count (NEW!)

Set program counter breakpoints

Hex/ASCII memory dump

## •plus

- Renumber BASIC
- Extended BASIC/ Machine prog CALL command
- RAM files directory with sizes
- Copy and Compare RAM .DO files
- RAM .DO file global text substitution

**POLAR ENGINEERING**

**P.O. Box 7188**

**Nikishka, Alaska 99635**

**(907) 776-5529**

**\$95<sup>00</sup>**

**Plus \$3.00 Shipping and Handling**

mean the loading is correct? I do not think my computer is bad.

Antonio A. Carrasco  
Sanderson, TX

► First of all, you don't mention the specific programs giving you problems. Since standard Basic programs seem to work fine (ESS and RPA), I would guess that the difficulty is in the programs you're trying to use. Not that they're bad, but that you're doing something wrong when you use them.

Not knowing the programs, I can't

really say much more. The programs could be a mixture of machine-language and Basic, and you're not following the proper loading procedure or after loading, you're not doing something necessary to ensure the proper running of the programs.

The Model 100 is designed to turn off the cassette recorder and return to OK anytime an error occurs while loading a program. The error could be a bad tape or just using the wrong command to load a file (i.e., CLOAD for a machine-language or text file, or CLOADM for a Basic file).

## NICAD LIFE EXPECTANCY

I have recently been reading conflicting statements concerning the life expectancy of the internal nickel-cadmium batteries in the Model 100. Estimates of the nicads' lives have ranged from one to three years. Can you or perhaps Radio Shack shed any light on this?

And assuming that the nicads eventually need to be replaced, can anyone estimate what the cost is likely to be?

One further question: Radio Shack says the internal batteries will keep data in memory from 30 days (with the 8K model) to about eight days (with the 32 version). Is this irrespective of the amount of data being stored? In other words, if I have a 32K machine, but am only storing about 8K worth of files and programs, will the nicads allow retention of this data in memory for longer than eight days with the power turned off?

Steve Rosen  
Federal Way, WA

# NEW

## FROM CUSTOM SOFTWARE

### RENUMBER

The utility you've been waiting for! Now you can renumber your BASIC programs IN PLACE! This powerful, 100% machine-language program is relocatable to any convenient place in memory. Renumber all or part of a program. You specify line numbers and increment.

\$29.95

## LET'S PLAY MONOPOLY

It's you against the computer in this fast paced version of the famous board game. The computer makes all its own decisions. Super fast, machine language graphics make this skillful game a pleasure to play.

\$29.95

## ASSEMBLER

ALL NEW! 100% machine language. Supports 6 character labels. Psuedo-ops include, DB, DW, DM, DS, EQU, ORG and END. Immediate data can be in decimal, hex or ASCII form. Extensive documentation includes sample programs and information on the ROM.

\$32.95

## MELODY MAKER

A musical program generator. Use simple cursor controls to enter sheet music. Melody Maker writes a program to play the song. Use Melody Maker to add musical routines to your own programs.

\$19.95

## CUSTOM SOFTWARE

• 1308 Western • Wellington, Kansas 67152 •

24 Hour Order Line: 316/326-6197



Please include \$1.00 for shipping.



► The life expectancy of the internal nicads depends on the amount of use they receive. Normally, they aren't used except when the standard batteries go dead (your battery LED comes on). At this point, information is a little sketchy.

Nicads last longer when they are periodically completely discharged.

In addition, they have a definite shelf-life (how long they can remain unused before requiring replacement), which is different from how long they can retain a charge.

Temperature also affects the useable lifespan, although to a lesser degree.

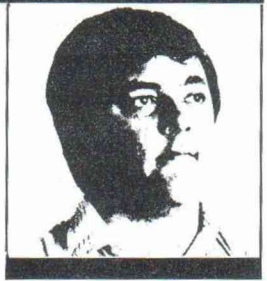
If you want to make your nicads last as long as possible, you should probably allow them to completely discharge every once in a while, but whether or not this will increase their lifespan more than a few months is debateable. Considering the amount of work and time involved in saving all your data and waiting for the batteries to give out, you might as well not even bother.

The batteries aren't that expensive, \$10.95 (#ACS-0100), and the service charge for replacing them is only \$15.

The time-limit the batteries can keep the memory alive depends entirely on the amount of RAM in the computer, not the amount of data stored in it. ◀

# BUSCH LEAGUE

DAVID BUSCH



## AUTO-PROGRAM — PART 7 REDEFINE KEYS AND SAVE THEM WITH KEY DEFINER

*Editor's Note: This is the seventh in a series of columns by Dave showing Portable 100 readers how to program the Model 100 to program itself. The columns are adapted from Dave's book Teach Your TRS-80 to Program Itself!, published by Tab Books Inc.*

**A** long time ago, in a galaxy far, far away, microcomputers didn't have function keys. Some didn't even have cursor keys!

All users had available were the standard alphanumerics and if they were lucky, a control key, escape key, and a few others.

This lack of keys led to some interesting programming solutions. WordStar, which could be used on computers without cursor keys, required strange combinations of control-key plus another key to move the cursor around on the screen.

WordStar's interesting cursor-movement solution lives on in your Model 100 with the control-key movement available as an option in TEXT.

**AT USED AS CONTROL.** Even more interesting, one popular word processing program for the Tandy line (Hint: A program with this name recently became available for the Model 100) asked the user to think of the "@" key as a control key. Of course, that meant there was no way to print the "@" character — except that the programmer "moved" it to shift-zero.

One of the nicest features of the latest generation of microcomputers, like the Model 100, is they include lots of extra keys. In addition to eight programmable function keys, we have control, code, graph, paste, label, print, es-

cape, break-pause and others. These keys can be used to make our programming easier, and our programs easier to use.

Function keys are used in two ways.

First, you may write the program with an ON KEY GOSUB interrupt, so when the designated key is pressed, control goes to the desired subroutine.

Or, you may actually want the key to return a set of characters when it is pressed. The Model 100 powers-up set to return strings like LIST, LOAD, SAVE, MENU and so forth when a function key is hit.

**CHANGE IT!** If you don't like those power-up definitions — change them! Here is a short program that will write an even shorter program redefining all eight function keys for you automatically. There are even two ways to use Key Definer.

First, you can run the program from Basic and enter the new key definitions you'd like. When you're done, hit escape. As if by magic, Key Definer will be gone from memory, and your new key definitions will be implemented. What's more, there will be a new RAM file you can run anytime you like to summon those same key definitions. Once defined, your function keys will stay the same, even when power is off, until you redefine them.

That RAM file is the second way to use this program. It can compile a selection of *different* function key settings — as many as you want — which you can load at your command.

Key Definer always creates a new document file (which you can load from Basic just like a Basic file, and then store in compressed form as a Basic file).

That program is named KEYDEF.DO. You can store different versions under various names, such as KEY1.BA or KEY2.BA. The Basic files are stored in tokenized form using less of your Model 100's precious memory.

**CHANGE FILE NAME.** Don't forget that you may also change a file name by typing NAME "oldfile" AS "newfile" to provide any name you want. You cannot change a document file to a Basic file this way, however.

But, exactly how and why would you redefine the special function keys of your Model 100?

Those who think that special function keys are best applied as a kind of shorthand to eliminate typing in GOTO or other phrases suffer from a failure of imagination.

The nice thing about general-purpose microcomputers like the Model 100 is they can be custom-configured to perform specialized tasks tailored to the exact needs of the end user. User-programmable special function keys can do a great deal more than printing out a lengthy Basic keyword. Consider these applications:

- Program a key so F1 produces "LIST 10-100", or "A\$=INKEY\$" or some other command you use frequently. Your function keys can store a string of up to 15 characters — so you can redefine them to include lines you frequently use in programs, such as A\$=INPUT\$(1) or OPEN F\$ FOR.

- Set a key to "PRINT TIME\$." Then, hit that function key to see the correct time anytime you want. Your uses are limited only by the number of keys available for programming.

**CHANGE KEY SYNTAX.** The correct syntax for redefining the Model 100's function keys is KEY n,string. For example:

```
KEY 1,"? TIME$"  
KEY 6,"? FRE(0)"
```

You do *not* need to activate these function keys with the KEY ON statement. Once defined, they are instantly

ready for your use while programming in command mode. To truly turn it off, you need to define the key as a null string:

KEY 1," "

KEY 6," "

Don't confuse the strings produced by pressing a special function key with the ON KEY GOSUB feature. That is entirely different. You can have redefined keys (useful from command mode) and ON KEY routines (useful in your programs) at the same time with different results.

You now know enough about the Model 100's function keys to know that Key Definer is a very simple program.

**KEY DEFINER.** A string array is set up in line 60 to hold eight key definitions, one for each of the eight special function keys. Then you are given the opportunity to restore the factory-set function-key definitions. You may use this if you want to write a key defining file that uses some of the stock definitions, such as F8=MENU.

Key definer shows you the current

key definitions, using KEY LIST, in line 170. You are next asked which key to define. The key to be defined, K, is given your desired string, D\$, in line 270.

Your definition is checked to make sure that it is 15 characters or less.

A carriage return can be added, if the definition, including the carriage return, is still less than 15 characters.

You can enter nothing, to cancel out a key completely, if you wish. The length of the string you are entering, and the remaining characters available is always displayed, as an aid for those who hate BEEP and error messages.

A counter, CU, keeps track of the number of keys defined. There is no particular reason for this, except I like to keep track of things.

The K element of the array D\$(n) is loaded with your chosen string. This process repeats as many times as you want until ESC is pressed. You may define any or all of the eight function keys, redefine some, skip some, or any combination.

**OPEN KEYDEF.** When ESC is pressed, the program branches to line 520,

where a file, KEYDEF.DO is opened. A For-Next loop from one to eight writes your definitions to RAM. If you have not defined a key, no definition is written. Note: This will not cancel out any default definitions for those keys.

Variable C corresponds to the line number in the new short program being created. The first line number will always be one. If you have defined eight keys, then eight line numbers will be used. The program line is built from the line number, C, plus "KEY" + STR\$(N) + "," + CHR\$(34) + D\$(N) + CHR\$(34). This produces a line like:

1 KEY 5,"PRINT TIMES"

The final step is to write one more line, containing the command "NEW". Then the new program, KEYDEF.DO, will be run. It will redefine your keys (although each is redefined by Key Definer anyway), and then erase itself from memory when it encounters the last, NEW command.

However, KEYDEF.DO still resides in RAM, and can be used later if you wish. Rename it so subsequent runs of Key Definer won't overwrite it with a new one. ◀

```

10 ' *****
20 ' *
30 ' *   KEY DEFINER   *
40 ' *
50 ' *****
60 DIM D$(15)
70 SP$=SPACE$(35)
80 S2$=SPACE$(20)
90 REV$=CHR$(27)+CHR$(112)
100 FF$=CHR$(27)+CHR$(113)
110 CLS
120 PRINT
    : PRINT "RESTORE DEFAULT KEY
    : VALUES? (Y/N)"
130 A$=INKEY$
    : IF A$=""GOTO 130
140 IF A$="Y" OR A$="y" THEN CALL

```

```

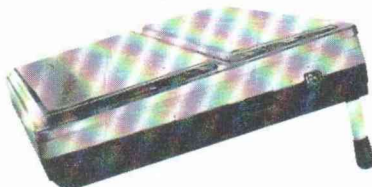
23164,0,23366
: CALL 27795
150 CLS
160 K$=""
170 PRINT @80,"";
    : KEY LIST
180 PRINT @2,"Which key to define
    (1-8)?"
190 PRINT @282,"Hit ESC to finish
    definitions.";
200 D$=""
210 PRINT @44," DEFINE KEY # ";
    : PRINT REV$;
220 K$=INKEY$
    : IF K$=""GOTO 220
230 IF K$=CHR$(27)GOTO 760
240 IF K$<"0" OR K$>"9"GOTO 250

```

## STRONG VERSATILE HARD COVER FOR MODEL 100

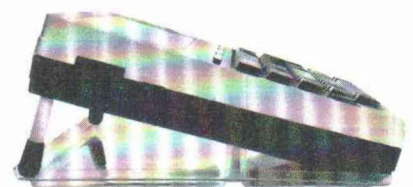
DESK TOP PROTECTION from dust, spills and things that get dropped. Optically clear so time and modem prompted messages are seen at a glance.

THE ULTIMATE LAP MACHINE! Invert cover and add KJM Prop Legs to create a stable interlocked unit at a most comfortable lap use angle.



THE PERFECT SOLUTION to proper protection of screen, keys, and key switch shafts when carrying in a briefcase, its softcase or in any case. Made of .080 inch thick high impact Eastman PETG plastic.

To be notified when available for other topless portables, send your name, address & model number.



**\$1795** + \$200 S & H, Check or MO, Texas Res. add 5%.  
30 Day Money Back Satisfaction Guarantee!

[ Prop Legs  
not included ]

**THE SOUTHWORTH COMPANY, Dept. F**  
4001 Hawthorne Ave., Dallas, TX 75219

```

ELSE GOTO 300
250 PRINT REV$;
: PRINT @60," Number 1-8
Please!";
260 BEEP
: PRINT FF$
270 FOR N=1 TO 1000
: NEXT N
280 PRINT @60,S2$;
290 GOTO 160
300 PRINT K$;FF$;
310 K=VAL(K$)
320 FOR N=80 TO 200 STEP 40
330 PRINT @N,SP$;
340 NEXT N
350 IF K<1 OR K>8 THEN GOTO 150
360 PRINT @282,"Hit ESC to finish
definitions.";
370 PRINT @2,SP$;
380 PRINT @42,"Type definition F";
MID$(STR$(K),2);", then [ENTER]";
390 PRINT @122,"==>";
400 A$=INKEY$
: IF A$=""GOTO 400
410 IF A$=CHR$(8) AND D$<>"" OR A$=
CHR$(29) AND D$<>"" THEN D$=
LEFT$(D$,LEN(D$)-1)
: PRINT @125,S2$
: GOTO 520
ELSE IF A$=CHR$(8) AND D$=""
THEN GOTO 520
420 D$=D$+A$
430 IF A$=CHR$(13)GOTO 570
440 IF LEN(D$)<16 THEN GOTO 520
450 BEEP
460 PRINT @282,SP$;
470 PRINT @282,"ONLY 15 CHARACTERS
PLEASE!!";
480 FOR N=1 TO 1000
: NEXT N
490 PRINT @125,S2$;
500 D$=""
510 GOTO 360
520 PRINT @125,D$;
530 PRINT @240," LENGTH : ";
540 PRINT LEN(D$);
550 PRINT TAB(20)"REMAINING :";
15-LEN(D$);
560 GOTO 400

570 CU=CU+1
580 D$=LEFT$(D$,LEN(D$)-1)
590 PRINT @280,SP$;
600 BEEP
610 PRINT @283,"End with carriage
return? (Y/N)";
620 A$=INKEY$
: IF A$="" THEN GOTO 620
630 IF A$="Y" OR A$="y" THEN GOTO 640
ELSE M$=""
: GOTO 730
640 IF LEN(D$)<>15 THEN GOTO 720
650 BEEP
: PRINT @283,SP$;
660 PRINT @283,"Too long for C/R.
Re-enter.";
670 FOR N=1 TO 1000
: NEXT N
680 D$=""
690 PRINT @283,SP$;
700 PRINT @125,S2$;
710 GOTO 380
720 M$=CHR$(13)
730 D$(K)=D$+M$
740 KEY K,D$(K)
750 GOTO 150
760 CLS
770 PRINT @60,REV$;" Writing File ";
FF$;
780 OPEN "KEYDEF.DO" FOR OUTPUT AS 1
790 C=C+1
800 FOR N=1 TO 10
810 IF D$(N)=""GOTO 890
820 C=C+1
830 M$=""
840 IF RIGHT$(D$(N),1)<>CHR$(13) THEN
GOTO 870
850 M$="+CHR$(13)"
860 D$(N)=LEFT$(D$(N),LEN(D$(N))-1)
870 L$=STR$(C)+" KEY"+STR$(N)+";
"+CHR$(34)+D$(N)+CHR$(34)+M$
880 PRINT #1,L$
890 NEXT N
900 C=C+1
910 PRINT #1,STR$(C)+"NEW"
920 CLOSE 1
930 RUN "KEYDEF.DO"
940 END

```

# ANALOG VOLTAGE INPUTS

**FOR YOUR TRS-80  
MODEL 100**



*Useful for measurement and control in laboratory,  
factory, or classroom.*

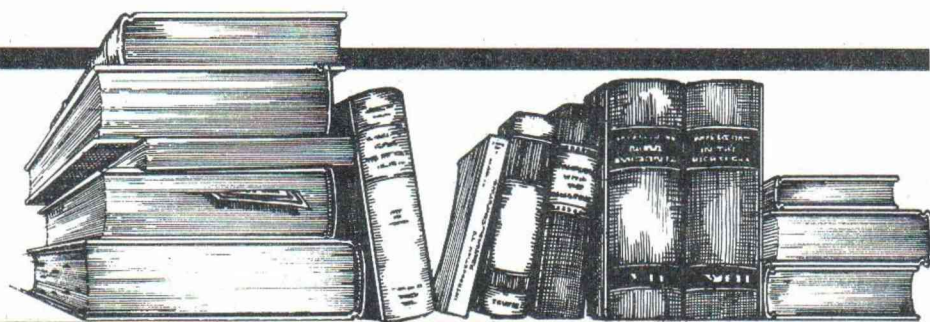
12 bit integrating A/D converter  
16 analog voltage inputs  
8 digital inputs bits  
8 latched digital output bits  
4 addressable output strobes.

*Price: \$580  
including software*

*We also manufacture the Model III/IV — A/D for the TRS-80 Models III, IV and 4P.*

**HUMPHREY INSTRUMENTS, INC.** (609) 896-1612  
35 Cold Soil Road Lawrenceville, New Jersey 08648

# BOOKS



## NOVICE AND PRO CAN LEARN FROM BOOK BY GOODMAN

### *The Simon & Shuster Guide to the TRS-80 Model 100*

Danny Goodman  
Simon & Shuster Computer Division  
Rockefeller Center  
1230 Avenue of the Americas  
New York, NY 10020  
221 pages  
\$9.95, softcover

By SHELDON L. RICHMAN

This is the most readable computer book I've come across in some time. It is also one of the best buys a Model 100 owner can make. Considering its wonderful clarity, wealth of helpful tips, and the several nifty Basic programs, \$9.95 is a steal.

Danny Goodman has a real knack for continuously making you say to yourself, "Why didn't I think of that?" He does this by revealing great little ways of using your Model 100, managing files, and getting the most out of the built-in ROM programs. Even if you are an experienced Model 100 user, Goodman will probably raise your eyebrows with one of his tips.

**BRIEFCASE GENIUS.** He begins with a general appreciation of the "genius of the briefcase portable computer." He writes, "I find myself using the portable more and more, even in the office."

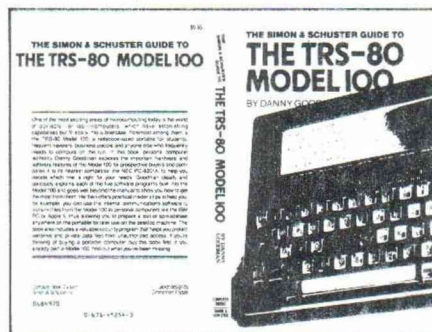
He takes it everywhere. "No place is sacred anymore," he writes. I found myself nodding with recognition.

Goodman's second chapter is for those who haven't bought a portable computer. [An article based on this chapter appeared in the January issue of *Portable 100*.] But Model 100 and NEC PC-8201 owners will find it just as interesting. It is a fair and decent comparison of the two machines, with good

photos highlighting some of the physical differences.

Goodman also lucidly discusses the differences between the two versions of Basic. In the end, he, like others who have made comparisons, finds it essentially a choice between the 100's built-in modem and the NEC's ingenious RAM expansion setup. For Goodman, it is a close call that only each buyer, with intimate knowledge of his own purposes, can make. The issue is well handled.

From there the book talks primarily to the Model 100 owner. I found the discussion of each topic delightfully thorough.



After analyzing the 100's physical characteristics, Goodman goes through the variety of peripherals the machine can be hooked up to.

He ably introduces the reader to cassette recorders (suitably warning the buyer to beware of recorders not built for computer data), mass storage devices, printers, and, of course, other computers. Several of these are discussed again in more detail at appropriate places.

**BEST BASIC INTRO.** Goodman knows the Model 100's built-in software well and so will his readers when they are through. After a valuable primer on file names, he provides the best little introduction to Basic I have come across. It is not intended to make the reader fluent in the language, but to teach Model 100 owners enough to enable them to intelligently use the computer.

He discusses such key commands as

LIST, RUN, and SAVE, and thoroughly covers saving to and loading from cassette. He also has a nice discussion about customizing the functions key for maximum convenience.

The chapter wraps up with an intelligent lesson on common Basic error statements. Any Basic novice who has keyed in a long program listing only to get an indecipherable error statement in line 10 will profusely thank Goodman for this.

**INTEGRAL PROGRAMS.** Goodman then proceeds through each of the integral software programs. In nearly every chapter he provides a good (and thankfully short) Basic program that performs a needed task. In the chapter on TEXT, there is a decent print formatter and a handy byte counter.

The formatter is as good and probably better than other public domain formatters — it even does envelopes. But it could be improved. When it gets to the end of a page, it sends too many line feeds to the printer, throwing off the page breaks. Someone better versed in Basic than I could probably fix that.

Also, the bold-face and underline commands did not work on my Silver Reed printer, but that is hardly Goodman's fault.

And I think I found a typo in the program. Every time I tried to print an envelope, the address was too far to the left. So in Line 1460 I added LM=30 (to set the left margin) just before RM=80 and it worked fine.

**ADDRSS & SCHEDL.** Goodman has brief chapters about ADDRSS and SCHEDL I found useful, especially his ENTRY.BA program, which prompts the user to enter names into ADRS.DO in orderly fashion for use by ADDRSS.

He integrates that program with one that automatically logs on to CompuServe and other information services. The second part of this program is highly valuable because it prompts for

## Radio Shack Model 100

NEC PC-8201

OLIVETTI M-10

## 8 K MEMORY MODULES

# \$49<sup>95</sup>

includes postage & handling

- Lowest price
- Easy installation, with just a screwdriver
- Satisfaction guaranteed or return within 30 Days for full refund

**Shipping:** From stock, Free UPS  
surface Continental USA  
— Add \$4.00 for UPS 2nd day Air  
— Add \$7.00 for Canada

**Payment:** VISA or M/C.

Checks held 14 days.

COD add \$5.00

Tax 6% (Calif. only).



Call for immediate delivery

(619) 434-1816



P.O. BOX 6292  
3510-C COLLEGE BLVD.  
OCEANSIDE, CA 92056

(619) 434-1816

each piece of information in the correct log-on sequence.

(I do have one beef — more typos. Lines 4470, 4480, and 4490 have the notation V3, V2, and V1, respectively; they should have been V=3, V=2, and V=1.)

In the TELCOM chapter, Goodman, once again, is the epitome of clarity when he gets to the arcane notions of baud rate, word length, parity, and stop bit. Goodman tells neither more than the nontechnical user would wish to know nor less than he needs to know. After reading this chapter, anyone can begin telecommunicating.

Don't skip the appendices because there is some good action there.

One of the programs is a veritable blessing. If you are like me, you keep a few utility programs in RAM nearly all the time, perhaps word and byte counters, a print formatter, perhaps a few other things. You may wind taking up RAM space, but what bugs you is all the directory spaces that are used. Goodman provides a great program called MENU.BA that lets you put all the utilities into one program taking up but one directory space. When you enter the program, you get a subdirectory of the utilities you put there. Great idea!

**SECURITY.** Finally, for the security minded, there is PASS.BA, a password program that defies even the most tenacious computer cracker. Anyone without the password who tries to turn on the computer will hear several alarming beeps before the Model 100 shuts down in a huff.

But beware, if you want to change the password from the one Goodman has chosen, you must be sure to enter the number of characters of your password in the next line. If you don't and it's a different number from Goodman's, you'll be locked out of your own computer. (It happened to me; it's not a pleasant feeling. And you will have to cold start to get back in.)

I am unreservedly enthusiastic about this book. If all computer writers lived up to Goodman's standards, there would be fewer confused novices around. Read this book no matter how much you already know about that legend in our time, the Model 100. ◀

*Sheldon L. Richman is a free-lance computer writer and director of publications for Citizens for a Sound Economy.*

## CHATTANOOGA CHOO CHOO SOFTWARE



Your One Stop Station <sup>Track 29</sup>  
For Computer Programs

### BUSINESS

#### \*Skyline Software

Tele-Stock - investment management  
(24K) ~~\$69.95~~ \$56.95

PortaTax - tax planning program  
(32K) ~~\$99.95~~ \$94.95

\*PortaCalc - Electronic spreadsheet

PortaPrint & PortaDex included  
(24K) cassette ~~\$69.95~~ \$66.45

\*PortaStat - statistical package

\*PortaMax - linear programming

\*PortaFin - loan & investment pkg.  
(24K) ~~\$44.95~~ \$39.95 ea.

#### Portable Computer Support Group

Businesspak++ includes:

Invoice, Financ, Telex++, Calndr,  
Type+, Brkevn

6 cassettes (8K) ~~\$99.95~~ \$85.45

\*Data+, Tenky+ (8K)

~~\$59.95~~ \$56.95 ea.

Sort+ (8K)

~~\$29.95~~ \$28.45

Tutor+ (8K)

~~\$39.95~~ \$37.95

#### \*Chattanooga Systems Associates

Book-Bookeeping,

Tfile-Tape File Management,

Check-Checking Account Record,

Trip-Expenses

(8K) ~~\$29.50~~ \$28.00 ea.

**Auto Pen-Word Processor**

Formats & prints from text files.

(8K) ~~\$29.50~~ \$28.00

Expanded Autopen (version 4.1),

Plus version 4.0

Auto Calc

**NEW!** ~~\$29.50~~ \$37.50

#### Celestial Software

Navigation Pac - seven programs:  
for Sailing (8K) ~~\$19.95~~

Astronomy Pac - Star identification

Complete with software,

astrolabe, Silva compass and book.

(16K) ~~\$59.95~~

Software and instructions Only

~~\$39.95~~

#### P.G. DESIGN

8K RAM MODULES

~~\$64.95~~ \$59.95 ea.

#### NAVComp

2 Aviation programs

in 1 package

Flight Planning

and Realtime Navigation

(16K) ~~\$49.95~~

#### Prickly-Pear Software 10% OFF

Viking - (24K) simulation game

Football Quarterback Strategy

(16K) ~~\$24.95~~ \$21.95 ea.

\* Available for NEC

Personal checks and

#### PURCHASE ORDERS WELCOME.

Please add \$2.00 for shipping

in the U.S.A.



Tennessee residents

add 7.25% sales tax.

C.O.D. orders add \$2.00.

Send for FREE catalog!

(615) 875-8656

P.O. Box 15892

Chattanooga, TN 37415



Circle No. 42 on Reader Service Card

# REVIEWS



## GRANDFATHER OF ALL BOARD GAMES GOES COMPUTER

### Monopoly

Version 2.0

Custom Software

605 North C, #2

Wellington, KS 67152

316-326-6197

Written by Greg Susong

Minimum 16K required

\$29.95

By M. J. BATHAM

Let's Play Monopoly is a game for the Model 100 which follows the rules of Monopoly by Parker Brothers. The computer is your opponent, and manages to roll doubles frequently and land on the best property. I played a dozen games before I managed to beat the machine.

The software package comes with an instruction card. Loading the program is a bit tricky. The author suggests going into Basic and typing sound off before attempting to load. Since part of the program is in machine language, you have to clear memory from Basic, and load two programs: LPM.CO and LPM.BA. Make certain you don't have any other machine-language programs

in memory, or the game won't load properly.

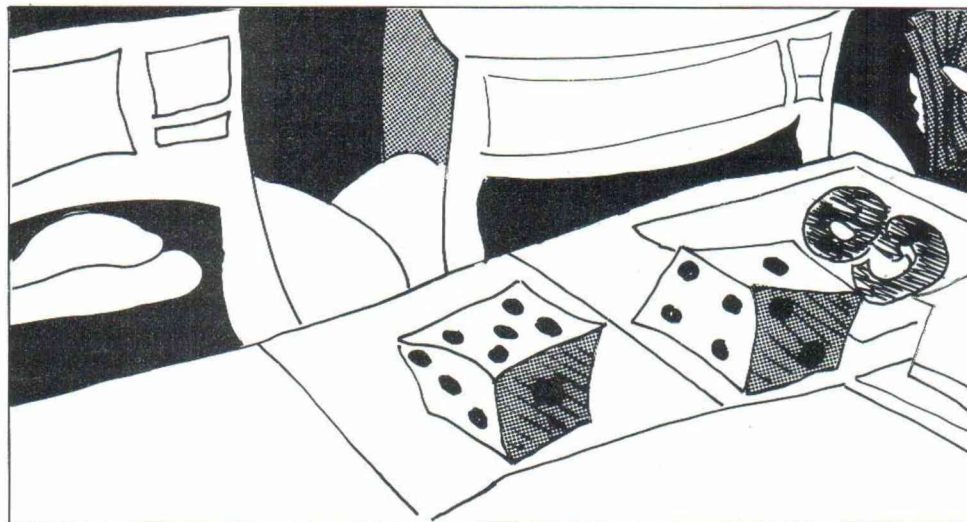
**ROLL THE DICE.** The program has a split screen. The left side is the monopoly board, and the right side shows the spot where you landed. The computer's playing piece is an inverted I and the player has a solid block. It's easy to tell the players apart.

When the game starts, dice are rolled. The graphics are really neat, and the dice spin on the screen. The players automatically advance to the proper square. As soon as the player finishes his turn, the computer automatically rolls the dice, so the game is speedy.

The game illustrates which lots are unowned, player owned, computer owned, and have hotels on them. The program has seven options:

1. Roll;
2. Buy;
3. Mortgage;
4. Unmortgage;
5. Trade;
6. Review; or
7. Quit.

The function card doesn't point out that numeric keys, rather than function keys, must be used to play Monopoly. If a function key is pressed inadvertently, the game does strange things.



## PORTABLE COMPUTER DESK TOP STAND

DUAL PURPOSE

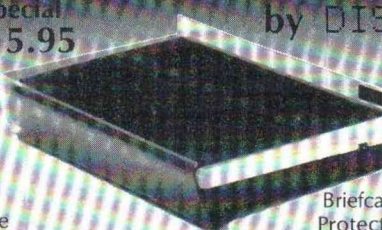
THE POCO STAND



Improves Viewing and Typing Angle

Special  
\$15.95

by DISKUS™



Briefcase Portable  
Protects Keyboard  
while carrying

Mail Check or Money Order to: DISKUS PRODUCTS 6003 Bandini Blvd., Los Angeles, CA 90040. VISA or M/C call (213) 726-3088 The POCO STAND \$15.95 plus \$2.00 each unit Shipping & Handling — CA residents add 6.5% sales tax.

Patent Pending. ©1983 DISKUS PRODUCTS For RUSH Delivery add \$2.00 extra — U.S. Blue Label

**LIKE THE REAL THING.** Whenever it's the player's turn, the menu appears. Before you chose roll, you have other options. Buy allows you to purchase the lot on which you've just landed and shows the purchase price.

Mort shows you which properties you own (one at a time), lists the mortgage value, and queries if you want to mortgage that lot. Anytime you're done, you hit Q to exit this section. If houses are owned, you're prompted as to how many houses you wish to mortgage.

A nifty feature is the program sends you to mortgage if you're out of money. You can't leave this field until you've borrowed enough money to pay your indebtedness.

Unmortgage is similar to mortgage, and each property is shown one-by-one.

Trade is a neat option. You must own all the property in a color group to attempt to trade with the computer, and can't have any liens on the property to be exchanged. The player choses the group to be traded, advises

the computer which property he wishes to have, and offers an amount of money. The computer accepts, or declines the trade until enough money is offered.

**TOUGH OPPONENT.** The computer is a hardnosed player. It wanted \$4000 plus Baltic and Mediterranean in exchange for Park Place and Broadway. After I hocked all my properties, the computer skipped over those lots time after time, and proceeded to beat me unmercifully.

Review allows the player to review property owned, the computer's lots, and lots unowned by either.

Quit allows you to return to the main menu, and asks if you want to save the game. This is very useful since monopoly games often take hours to play.

**A WINNER.** I was impressed by the excellent graphics used by the software author. The guy in jail has a mournful face, the railroad cards are in perfect detail with the board version of the

game, and the car in free parking has a real spare tire. The graphics for the utilities are especially good.

This program is terrific, and for those of us who want to play as well as work with our 100s, it's the game to buy at a very reasonable price. ◀

## ON THE ROAD EXPENSE MANAGER CUTS PAPERWORK

### *Traveling Expense Manager*

Version 2.1

Traveling Software Inc.

11050 Fifth Ave., NE

Seattle, WA 98125

206-367-8090

Written in Basic and  
machine language

Minimum of 16K required

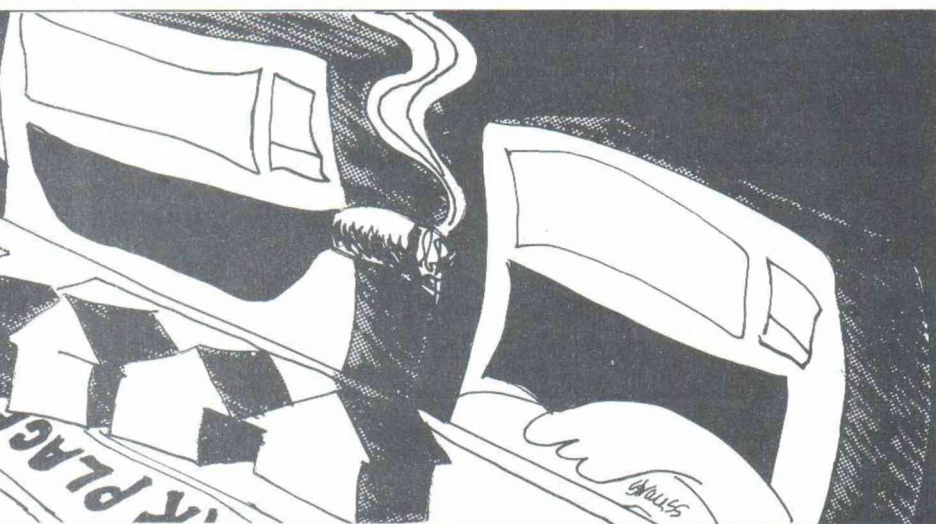
\$59.95

By M. J. BATHAM

**T**he Traveling Expense Manager keeps track of expenses for business trips or sales calls, summarizes these expenses, sorts them by category or by client, and prompts a hard copy of the report. The software is compatible with the Model 100, Olivetti M 10, and NEC PC-8201 computers.

Besides the expense and report programs there are two other useful programs: a data-base management program and a memory manager that calculates length of files stored in the computer.

The manual is user friendly and written for someone with no experience. The flip side of the cassette tape has an audio tutorial by the company's



## MODEL 100 **SIG** ON COMPU SERVE

Log on to  
the MODEL 100  
Special Interest Group  
on CompuServe and  
gain access to more  
than 400 FREE programs!

Spreadsheets,  
Printing, Diaries,  
Utilities, Programing,  
Formatters, and more! Just  
log on CompuServe and  
**GO PCS-154** at the prompt.

Traveling Professor, who explains how to use the software.

**EXPENSE ACCOUNT.** The expense account program (EXPMGR.BA) has three separate data banks for organizing expenses:

The account log defines the type of expense such as auto, travel, entertainment, or meals.

The fund log defines the type of payment such as cash or credit card, and keeps a running balance by category.

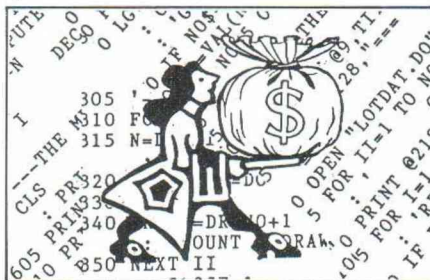
The expense log summarizes the expenses by account name, customer, date, billable/non-billable, and by amount. This is very useful for allocating costs if the expenses are for more than one customer.

The opening menu gives the user a choice:

- Add-update expense log;
- View summaries;
- Define expense accounts; or
- Manage funds.

You begin the program by selection three to set up accounts. The program allows up to three letters in the name of the account, although I'd have preferred a longer name field. The screen

prompt shows "Expense Account No.:", so I tried using a three-digit number rather than letters. It wouldn't accept my input. The authors could have used name instead of number. The description field allows up to 32 characters which is more than adequate.



**CLOSER LOOK.** After setting up the accounts, select 1. This option allows you to define a client name or project and to enter an account name, date, and amount.

You also have the choice of billable or non-billable, form or payment, and description. The description field prints letters in uppercase even though they're typed in lowercase.

If you forget the account codes, function key 6 will display a list of ac-

count names. I tried to enter an account name that I hadn't previously defined and the machine beeped until I corrected the name.

One excellent feature is comma treatment when inputting numbers. The manual warns users not to use commas, but I tried anyway. The cursor completely ignores the comma and waits until a number is typed. Another feature is that even dollar amounts can be input, and the program adds the two zeros to the right of the decimal point.

The view-summaries option allows a choice of project or client totals as well as expense account totals. The program sorts alphabetically by client name and also by account name. You can chose a beginning date of files (the default is January 1, 1984) or an ending date (defaulting to today's date). Function key 1 starts the summary and F8 returns to the main menu.

**FUND MANAGER.** Option 4, manage funds, was very useful. The program defaults to cash, check, Visa, Mastercard, or American Express. You can redefine the titles easily. This function keeps track of how much of a cash advance is left, the amounts paid by check, and totals of items charged on credit cards.

Three RAM files are created by the program EXPMGR.BA, EMFUND.DO, EMACCT.DO, and EMDATA.DO. When you're ready for a hard copy of the reports, select EM-RPT.BA from the menu, and a submenu appears with four choices:

- Print report by client or project;
- Print report by fund;
- Print expense-account summary; or
- Close out expenditures.

**PRINT OPTIONS.** When any of the three print options are selected, a prompt appears to chose beginning and ending date. Defaults are the first day of the year to begin, and today's date to end.

The program then reminds you to set up the printer and press F1 to start and asks you if you need a line feed. Using my 100 with a NEC Spinwriter 3550 or the Olivetti typewriter-printer model ET 121, I can't generate a line feed. With this print program, however, I was able to use any of these daisywheel printers.

When using the second option, to print expenses by fund, a sorting file

## VCALC: A FULL MULTI-FUNCTION SPREADSHEET FOR THE MODEL 100

- 99 ROWS OR 26 COLUMNS
- USER SELECTABLE OPERATION FOR STAND-ALONE OR WITH VIDEO/DISK UNIT
- 8 X 40, 25 X 40, OR 25 X 80 DISPLAY OPTIONS (VIA LCD OR CRT)
- SPLIT SCREEN CAPABILITY
- LINK MULTIPLE FILES TOGETHER BY EQUATING CELLS WITHIN DIFFERENT FILES
- AUTO-ADVANCE FEATURE TO MOVE CURSOR FROM CELL TO CELL DURING TEXT ENTRY
- MULTI-FILE MERGE CAPABILITY
- CURSOR MOVEMENT — UP, DOWN, LEFT, RIGHT, GO ANYWHERE
- DATA ENTRIES FOR NUMBERS, LABELS, AND FORMULAS
- FULL ARITHMETIC FUNCTIONS WITH ROW/COLUMN SUMMATION AND AVERAGING
- TEN LEVELS OF PARENTHESIS
- REPLICATE FORMULAS
- INPUT/OUTPUT FROM/TO CASSETTE, DISK, RS232, TEXT FILE, OR MODEM
- INSERT OR DELETE ROWS OR COLUMNS
- ON-LINE HELP FILE (OPTIONALLY REMOVEABLE)
- AVAILABLE ON DISK OR CASSETTE W/FULL DOCUMENTATION
- REQUIRES 32K (FOR REASONABLE USE)
- COST: \$59.95

SEND CHECK OR MONEY ORDER TO:

ProSoft Enterprises  
457 Ilimano Street, Kailua, HI 96734 (808) 254-2622  
(Hawaii residents please add 4% sales tax)

# FULL-FEATURE SPREADSHEET

## Application Templates

For Your Radio Shack TRS-80 Model 100/NEC PC-8201A Portable Computers

AMPI's *AmericanCalc Spreadsheet*—designated TPlan for the Radio Shack TRS-80 Model 100, and NPlan for the NEC PC-8201A—is a full-feature spreadsheet program. It has the following features: handles up to a maximum of 90 rows or 26 columns; cursor movement is left, right, up, down, and go to any location; accepts data entries for numbers, labels, and formulas; formulas include addition, subtraction, multiplication, division, power, trigonometric, integer, absolute, natural logarithm, and exponentiation; replicate numbers or formulas; insert or delete rows or columns; copy, save, load, and screen dump; and built-in calculator. The program is shipped with bound instruction manual, pre-recorded audio tape, and vinyl album case.

This popular spreadsheet now has three new templates especially designed for busy people who do not have the time to set up their own spreadsheet applications. Once the TPlan or NPlan is loaded, simply select and load the application template that fits your particular need. The three new templates are:

**Financial Management** — Includes T Plan and N Plan application templates for: Stock Portfolio, Home Ownership, Home Budget, Life Insurance Requirement, and Personal Check Register.

**Business Management** — Includes T Plan and N Plan application templates for: Income Statements, Balance Sheets, Business Start-up, Break-even Quantity, and Expense Analysis.

**Sales and Marketing Management** — Includes T Plan and N Plan application templates for: Sales Forecast, Profit Mark Up, Sales Analysis, Project Cost Estimate, and Advertisement Efficiency Measurement.

AMPI also has available several additional new software programs for the Radio Shack TRS-80 Model 100 and NEC PC-8201A. These include: Income Property Analysis, Portfolio Analysis, Curve Fitting, Histogram and Plot, Equation Solver, RPN Calculator, and FORTH.

Write for free catalog listing additional Radio Shack TRS-80 Model 100 and NEC PC-8201A business and engineering programs.



AMERICAN MICRO PRODUCTS, INC.  
705 North Bowser  
Richardson, Texas 75081  
(214) 238-1815

Circle No. 32 on Reader Service Card

© 1984 American Micro Products, Inc.

Wherever you  
are your

IBM PC

is with you!



With  
Remote Control™  
software

... and your Model 100, HP® Portable or any other portable computer. A convenient link between your portable and your IBM, whether they are side by side or a thousand miles apart. Exchange files, leave messages, even take control of your IBM® PC from your portable's keyboard.

To order or obtain more information call or write now. Only \$180 with null modem cables. VISA/MC welcome.



251 Park Avenue South,  
New York, NY 10010  
(212) 475-5200  
Tlx: 467383 KML NY

© 1984 Kensington Microware Ltd.

## REVIEWS

message appears. The machine takes a while to sort the file and output to the printer. Then a second message, re-sorting file, appears and the menu reappears. The manual cautions you to be patient and not hit break or the file will be messed up.

Once a hard copy is generated, you can select the option to close out expenditures. The option purges the document files and frees your memory.

**DATA MANAGER.** Along with the expense account, report, and memory manager, there is a real bonus — data manager. But I had to go through the tutorial and try a couple of examples before figuring out how to use it efficiently.

The program prompts for an input file name, which it calls A, asks for the number of a data field, and if you want the input file deleted. If the file is long and your RAM memory is getting low, it's better to save the input file to tape or disk and chose the delete option.

The next prompt asks for an output file name, and number of data fields you want in the new file. The screen then shows the choices of select (F2), merge (F3), or menu (F8).

**LIMITLESS.** When select is chosen, the next options seem overwhelming. If you've picked EMDATA.DO as the beginning or input file, you're shown a listing of the data field numbers and description. When creating the new file, data from the beginning file can be rearranged in any order you prefer. For example, you might want expense account name first, then amount, client name, date, and fund.

After data-field order is created, you can select information within the field, such as client names from A to E only, or amounts between \$10 and \$100, or dates from the beginning of this month to today. You can rearrange none, some, or all of the field.

The enter key stops arrangement of the field and returns to the previous menu with F7 now added to the screen. When this is hit, "sorting..." appears on the screen, and extra periods are added to remind you the program is still thinking. When sorting is completed, the beginning menu is shown, and the new, sorted file appears as a document file.

**MORE OPTIONS.** The program also allows a summary function that selects information from any document and

produces a total. Another option is the merge function which combines two files into one file based on a field common to both. The summarize and merge options are operated exactly like the select program.

I experimented with the program using the select portion to alphabetize my ADRS.DO file and to separate CompuServe ID numbers. It worked very well. This data-manager program isn't dBase II in options, but I'm not certain it isn't easier to use and it sorts faster!

**MINOR OBJECTIONS.** A minor complaint is the slow screen-response time when the Traveling Software logo appeared. This is easily corrected by breaking into the program and shortening the time-delay loop.

One other irritation was the explanation of the data-base manager instructions. The authors spent many pages showing me how to connect the cables and set time and date. I'd have appreciated a more user-friendly explanation of the real meat-and-potatoes of this package.

**GOOD OVERALL.** The Traveling Expense Manager also can be interfaced with Traveling Writer to prepare standard report or letter forms, or billing formats. Traveling Writer isn't included with this software, but the authors tempt you with the possibilities of using both programs to create form letters and invoices.

All four programs chewed up a total of 22.5K of memory, but you needn't have all in memory at the same time. DATMGR occupied 4.5K, RPT 7K, EXPMGR 9K, and MEMMGR 2K.

I was impressed with the program's ability to track expenses by client and account as well as by cash or credit card, and to alert me when I'd spent the cash advance, overdrawn my checking account, or gone over my charge card limit.

I like the report function which generates line feeds, the memory manager which lets me see file length, rename files, and efficiently kill document files. I'll get a lot of practical use out of the data-base management program.

And the price is excellent. Four programs for \$60 breaks down to \$15 per program. Where can you get a good data-base manager these days for that? I'll get a lot of use out of the Traveling Expense Manager. ◀

# Introducing TTXpress. The full-function computer printer that fits in your briefcase.



**N**ow you can take a printer everywhere you go... on the road, to meetings, aboard planes or in your car; this quiet, 3-pound printer turns your portable or handheld computer into a complete system.

Versatile TTXpress prints at 40 characters per second... wonderfully clear text, charts and graphics. It even prints spreadsheets up to 160 characters across on 8 1/2-inch paper.

The industry standard interface makes the TTXpress work with all popular computers. It is available now through your local authorized dealer. Sales and service nationally.

**"The world's smallest full-function printer."**

**\$229** Suggested retail price.

**TTXpress™**

TTX and TTXpress are trademarks of TTX Inc., 3420 East Third Avenue, Foster City, CA 94404 415/341-1300

# Our Lowest Price Ever on



## Give Your Someone Special the Advanced

8K Model 100      24K Model 100

**399<sup>00</sup>**      **599<sup>00</sup>**  
26-3801      26-3802

As Low As \$28  
Per Month on  
CitiLine Credit

As Low As \$35  
Per Month on  
CitiLine Credit

### Innovative Technology from Radio Shack

Take advantage of Radio Shack's lowest price ever on the Advanced Technology Model 100, and give your someone special the special power and convenience of America's #1 portable computer. The Model 100 represents the best in microcomputer technology from Radio

Shack, the innovator in electronics for more than 60 years. At \$200 off last year's price, the Model 100 is sure to be under your tree this Christmas!

### Give Computer Power In a Compact Package

No other gift packs as much convenience and utility into so compact a package. The Model 100 is just  $2 \times 11\frac{7}{8} \times 8\frac{1}{2}$ ", but includes a full-size typewriter keyboard. The big eight-line by 40 character liquid crystal display adjusts electronically for comfortable viewing from any angle and displays superb dot-matrix

graphics. There's a built-in telephone modem, and five internal programs turn the Model 100 into a personal word processor, electronic date and address book or telephone auto-dialer. You can even create your own programs in BASIC. And all this power and performance comes in a computer weighing less than four pounds! Just slip the Model 100 in a briefcase for computer power anywhere. It's easy to see why the Model 100 was Info-world's "Computer of the Year" and why, at these low prices, it's the perfect computer for Christmas giving.

# the Computer of the Year!



## Technology of the Model 100 and Save \$200

### Versatility Makes the Model 100 Indispensable

The Model 100's size and versatility quickly make it an indispensable part of the day. The text handling ability of the Model 100 makes it perfect for all sorts of writing, the built-in modem lets you access computerized information services by phone, and the address and scheduling programs make sure "to-do" lists are up to date.

### Get Complete Support for Your Model 100

The Model 100 is supported by a complete line of quality

accessories designed to make hundreds of jobs easier and less time consuming, including a bar code reader for retail couponing and inventory control, printers, cassette recorders and disk storage. Ready-to-run cassette software is also available. And all this support is available at the more than 1200 Radio Shack Computer Centers and at participating stores and dealers across the United States.

### The Perfect Gift at the Perfect Price

Come by today and learn why the Model 100 makes such an extraordinary gift for students

and professionals, and see for yourself why it's such a value now.

**Radio Shack®**  
**The Technology Store™**  
A DIVISION OF TANDY CORPORATION

Send me a free 1985 Computer Catalog.

Mail To: Radio Shack, Dept. 85-A-340  
 300 One Tandy Center, Ft. Worth, TX 76102

NAME \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_  
 STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
 TELEPHONE \_\_\_\_\_

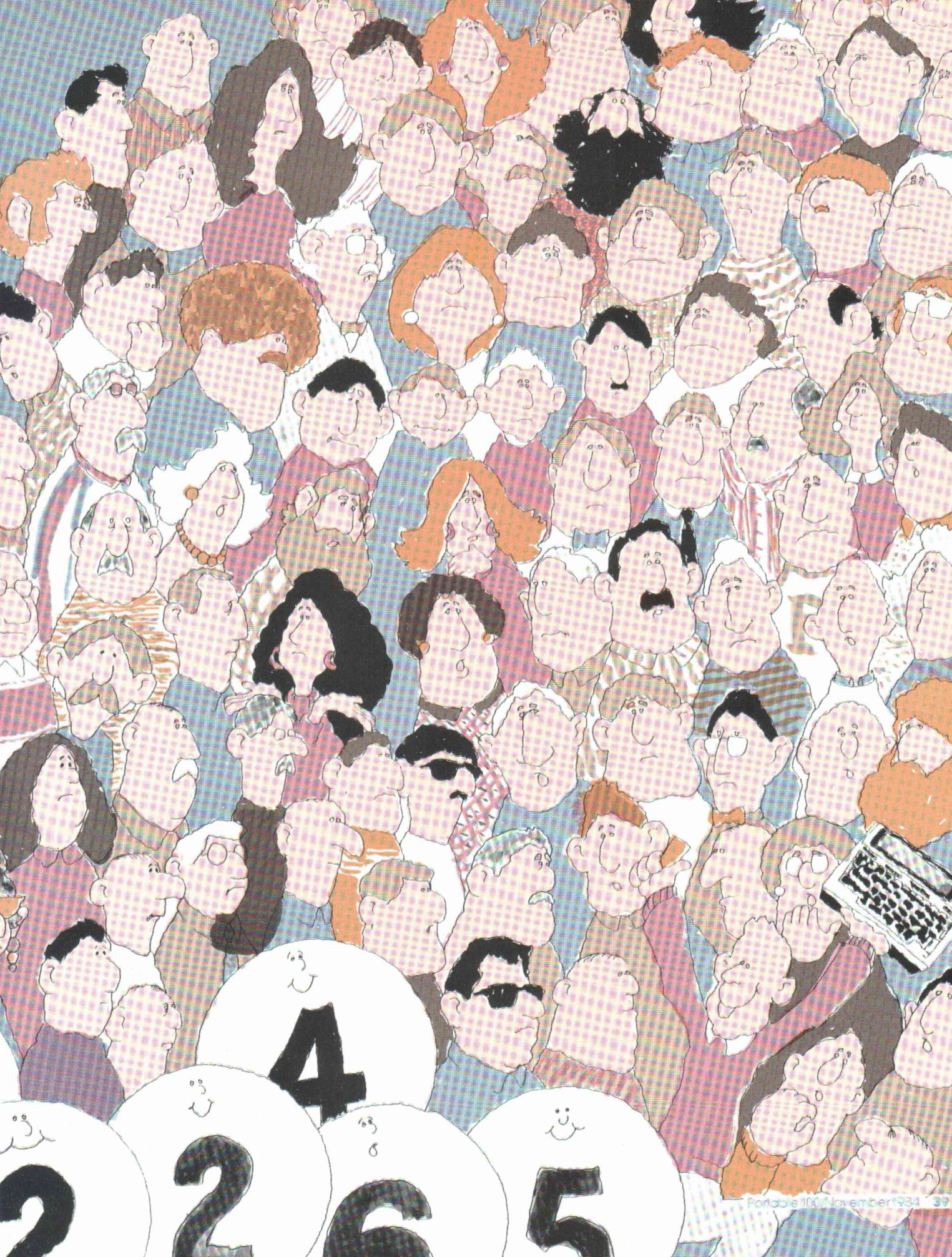
Sale begins Nov. 1, ends Nov. 30, 1984. Prices apply at Radio Shack Computer Centers and at participating Radio Shack stores and dealers.

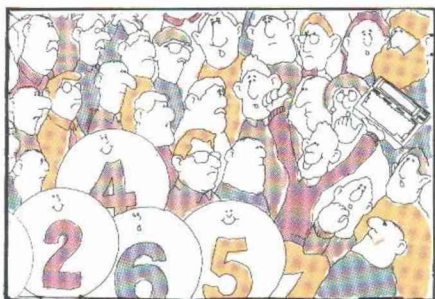
Circle No. 23 on Reader Service Card

# THEY SHALL RETURN!

A winning lottery number  
often returns—use a  
100 to find out how often.







By RONALD F. BALONIS

**T**he Model 100 is a natural for armchair analysis of things, like lottery numbers. Whether you follow a lottery game for the fun, excitement, or suspense of it, or just a desire to win, you probably do some type of analysis. Everyone has a need for order, and number analysis does away with some of the uncertainty in selecting lottery numbers.

Once upon a time, the way to become rich was to inherit it, or through hard work and a bit of luck. Now, all you need is a buck for a lottery ticket and the bit of luck; the odds are much the same, maybe better. State Lotteries are

billion dollar a year businesses with the noble purpose of making you rich and reducing your taxes.

**HOW IT BEGAN.** The lotteries started in 1964 in New Hampshire; and now, 16 states and the District of Columbia have some form of one; 70 percent of the adult population play them.

Pennsylvania has one of the richest and most productive lottery systems of all. Its Lotto has made over 130 millionaires in less than two years.

In Lotto, for a buck, you get two chances to pick the six numbers of 40 numbered ping pong balls in the drawing. The odds of winning are near two million to one.

The Pennsylvania Lotto game uses an on-line computer terminal. You fill out a bet slip, about the size of the old computer cards, by shading a block next to the selected numbers; then the terminal reads the slip and prints your ticket with the numbers selected, drawing date, amount bet, and a validation number.

Neat and easy. The computer only does record keeping; a lottery machine

with numbered ping pong balls is used for the actual drawings.

**NO LOSERS.** Pennsylvania's Lotto is a parimutuel system. That is: 50 percent of sales are used for the prize money, divided among the winners; and 50 percent for programs benefiting senior citizens. No losers in this one.

The odds are:

- First prize (all six numbers right) — 1,919,190 to 1.
- Alternate first prize (five plus an alternate number right) — 319,865 to 1.
- Second prize ( five of six right) — 9,407 to 1.
- Third prize (four of six right) — 228 to 1.

With a choice between winning or losing, most people choose to win. It's natural to use any help you can. LOTTO.BA (Program Listing 1) performs analysis by methods which depend as much on visual acuity as numeric value.

## ThinType™ 80

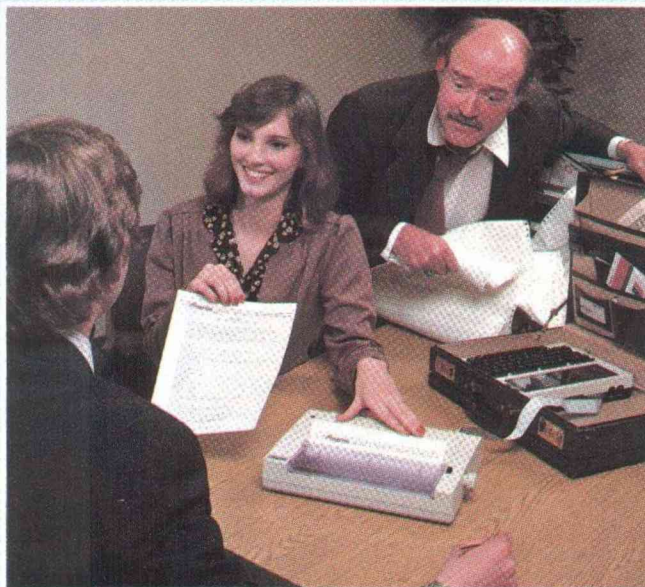
### BATTERY POWERED LETTER QUALITY PRINTING

#### True Solid Font Portable Printing

ThinType's self contained A/C Adapter/Charger and Rechargeable Batteries provide Letter Quality Printing Anytime, Anywhere!

- 15 C.P.S. Bidirectional Impact Printing
- No Thermal-Ink/Jet Print Smear Problems
- Over 2 Million Characters Per Replaceable Ink Roll
- Easily Operates in Half a Briefcase

**Retail Price: \$395**



"Some Have It, Some Don't"

## Axonix

The Portable Peripherals People  
417 Wakara Way, S.L.C., Utah 84108

Call Toll Free **800-821-7093** or 801-582-9271

**PREDICT RANDOMNESS?** Can you compute the probable outcome of random events? Can you predict the outcome of a random event? The answer, of course, depends on the randomness of the event.

Lottery number machines are made to produce fair and random drawing numbers, but mechanical and physical differences are statistical facts of life. The numbers drawn only approach the expected uniform distribution. So, given that after the fact digit trends exist and occur, the key is to identify them before the fact to improve your chances.

The analysis starts with a Lotto data file, LOTDAT.DO (Exhibit 1), which you maintain with the 100's text editor. The file is set up as "last in, first out" with new numbers added to the top. For an analysis run, you select numbers from the last five drawings up to the last 99 drawings.

LOTTO.BA analyzes winning numbers in four ways:

Ranked Tabulation displays five numbers at a time with these statistics: frequency, percent of total, cumulative

total, and cumulative percent. This allows a numeric evaluation of the numbers of the analysis run. You can page through the list by pressing the spacebar. Use the Model 100 print key for hard copy of the data, one screen at a time. Press E and you exit to the menu.

Ranked Bar Plot displays a bar graph of the numbers ranked from most frequent to least frequent. This gives a graphical display of the shape of the distribution of numbers in the analysis run. Press E to exit to the menu.

Bar Plots shows the digit positions of the drawings. Here you can examine the shape of number distribution at each position or of all the numbers in the analysis run. If you press 1 to 6, a digit's frequency distribution will be displayed. Press 0 to display the total frequency distribution of the analysis. E will exit to the menu.

Simulated Drawing will simulate a drawing based on the cumulative frequency distribution of the drawings of the analysis run.

**HAZARDOUS TO WEALTH.** This type of analysis program makes the most of

the 100's unique built-ins: graphics, RAM files, text editor, and a quick Basic code. Because of them, the program is a machine-dependent program.

Its basic algorithm is:

- Read the numbers of the drawing data file;
- Sort by position;
- Sum to a position array;
- Sum to a number array;
- Sort number array
- Compute the cumulative distribution for the drawing simulation; and
- Display the data with tabulations and graphics.

Refer to the remarks in the program listing for details of its workings.

To adapt the program to the Lotto-type game you follow, get a list of the numbers drawn. Pennsylvania's Lottery Commission prints listings of numbers drawn. That's where LOTDAT.DO came from. A word of warning though, "lotteries can be hazardous to your wealth." ◀



## WHY BREAK YOUR BANK ?

You must be paying too much for  
Model 100 Software

SJi LEADS THE WAY WITH OUTSTANDING  
PRODUCTS AT AFFORDABLE PRICES

### NEW SJi Assembler

Code occupies 8k RAM. Features Intel-style mnemonics, most needed pseudo-ops, offset addressing user-friendly error messages.

### SJi Word 100

Features directed output, menu control (line, page, text length, more), file chaining, page numbering, merge with mailing address file, multiple copies, margin controls, and Much More.

### SJi Graphics to Printer Dump

Dot by dot transfer of whatever is on the screen. Versions for these printers: TRS-80 graphics Epson FX, RX or Mx models with Graf Trax Plus, NEC-8221A, serial printers without auto line feed but with optional hardware handshake (ready busy on pin 5), all parallel printers (using a "#" sign on a rotated screen). Specify printer.

### SJi RTTY

Operates at all popular baud rates with 1 or 1 1/2 stop bits. All communications through RS-232 port. Optionally echo all received signals and keyboard strokes to a parallel printer.

(User-supplied FSK modular/demodulator required.)

**\$19.95**  
EACH

TRS-80, EPSON, GRAF TRAX PLUS, & NEC ARE REGISTERED TRADEMARKS OF TANDY CORP., EPSON AMERICA, INC. & NEC AMERICA, RESPECTIVELY.

**SWINDELL JUDY inc.** SUITE 349 4316 DRESSLER RD. N.W. CANTON, OH. 44718 216-833-7504

# Avion Communications

## Your Notebook Computer Software Source

### PORTABLE COMPUTER SUPPORT GROUP

Business Pak +	\$76.50
Data +	51.00
Sort 2 +	30.00
Tutor +	28.00
Tenky +	51.00
Disk +	59.50

### AMERICAN MICRO PRODUCTS

American Calc	
Spreadsheet	\$85.00
RPN Calculator	25.00
Equation Solver	34.00

### TRAVELING SOFTWARE

Time Manager	\$51.00
Appointment Manager	51.00
Sales Manager	51.00
Expense Manager	51.00
Traveling Writer	42.50

### SKYLINE MARKETING

Porta Calc (Incl. Porta	
Dex & Porta Print)	\$59.50
PortaStat	38.00



Personal checks welcome.  
Please add \$2.50 for shipping.  
NYC residents add 8.25% sales tax.

Call toll free  
1-800-235-2115  
In New York call (212) 532-6660  
Avion  
Communications, Inc.  
Suite 2405  
200 Madison Ave.  
New York, N.Y. 10016

## LOTTO

Program Listing 1. LOTTO.BA.

```

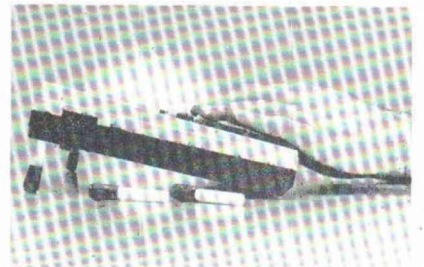
10 'LOTTO.BA 10/26/83 BY RON
    BALONIS
15 CLEAR 100
    : DIM NO(40)
    : ' NUMBER ARRAY
20 DIM INDX(40)
    : ' SORT INDEX ARRAY
25 DIM DOT(6,40)
    : ' POSITION ARRAY
35 DIM PRCNT(40)
    : ' CUME DISTRIB. ARRAY
39 DIM DOT(6)
    : ' DRAWING BUFFER ARRAY
40 CMD$=" "+CHR$(34)+" "+C
    HR$(34)+"/E "
50 TITLE$==" PA LOTTO ANALYST =="
55 '---RANDOMIZE---
60 II=VAL(RIGHT$(TIME$,2))
65 FOR I=1 TO 3.3*II
70 N=RND(1)
75 NEXT I
95 '---SIGN ON BILL BOARD---
100 CLS
    : PRINT @9,TITLE$ " RFB'83"
110 PRINT @290,"== ENTER TO EXIT ==";
120 PRINT @129,"NUMBER OF DRAWINGS? ";
130 LGTH=2
    : GOSUB 4020
    : 'GET # DRAWINGS
140 IF NO$="" THEN MENU
150 NO=VAL(NO$)
160 IF NO<5 OR NO>99 THEN 100
190 '
195 '---READ THE DRAWING FILE---
200 CLS
    : PRINT @9,TITLE$
205 PRINT @128,"=== COUNTING NUMBERS =
    =="
210 OPEN "LOTDAT.DO" FOR INPUT AS 1
215 FOR II=1 TO NO
    : ' GET DRAWINGS
220 PRINT @218,USING "###";II
225 FOR I=1 TO 6
    : 'READ DRAWING NUMBERS
230 IF EOF(1) THEN I=6
    : NEXT I
    : II=NO
    : GOTO 350
235 INPUT #1,N
240 NX=NX+1
    : DOT(I)=N
245 NO(N)=NO(N)+1
250 NEXT I
255 '---SORT FOR L-R DIGIT POSITION---
```

```

260 M=6
    : N=6
    : '---DO A SHELL-METZNER SORT
265 M=INT(M/2)
270 IF M=0 THEN 310
    ELSE I=1
    : L=N-M
275 J=I
280 K=J+M
285 IF DOT(J)<=DOT(K) THEN 300
290 R=DOT(J)
    : DOT(J)=DOT(K)
    : DOT(K)=R
295 J=J-M
    : IF J<1 THEN 300
    ELSE 280
300 I=I+1
    : IF I>L THEN 265
    ELSE 275
305 '---SUM THE DIGITS---
310 FOR I=1 TO 6
315 N=DOT(I)
    : DOT(I,N)=DOT(I,N)+1
320 DOT(0,N)=DOT(0,N)+1
330 NEXT I
340 DRWNO=DRWNO+1
    : 'COUNT # DRAWINGS
350 NEXT II
    : CLOSE 1
390 '
395 '---MAKE THE SORT INDEX---
400 FOR I=1 TO 40
405 INDX(I)=I
410 NEXT I
415 '
420 '---SORT THE 40 NUMBERS BY
    INDEX---
430 M=40
    : N=40
    : ' DO A SHELL-METZNER SORT
435 M=INT(M/2)
440 IF M=0 THEN 490
    ELSE I=1
    : L=N-M
445 J=I
450 K=J+M
    : JJ=INDX(J)
    : KK=INDX(K)
455 IF NO(JJ)>=NO(KK) THEN 470
460 R=INDX(J)
    : INDX(J)=INDX(K)
    : INDX(K)=R
465 J=J-M
    : IF J<1 THEN 470

```

## PROP LEGS



- Elevate your Model 100 to the proper angle for use
- Slip easily into rear screw holes in case
- Snug fit
- Non-skid rubber feet
- Durable plastic legs
- Handy — your Prop Legs fit in your pocket!
- Only \$5.00/pair

Includes shipping, handling, & CT residents sales tax.

Send check or money order to:

**KJM Development**

P.O. Box 698, W. Hartford, CT 06107

DEALER INQUIRIES INVITED

## THE SOLUTION TO CHECK CONTROL CHEQUE WRIGHT

- Quickly find your current balance
- Easily reconcile your account
- Sort on any field
- Works with an 8k machine
- Reports formatted for the display
- Reports formatted for the printer
- Your data can be located from and saved to rs-232 modem, and cassette

**\$19.95**

**MICRO HELP**

4009 Pacific Coast Hwy  
Torrance, Ca. 90505

SHIPPING AND HANDLING IS INCLUDED  
CA RESIDENTS MUST ADD TAX.

## Model 100 - NEC 8201A Olivetti M10 PORTABLE SOFTWARE

*Powerful and easy to use, designed to save RAM allowing use of several program with data files.*

### AutoPen (2.5K)

#### Word Processing \$29.50

Menu selection for standard formats or use 22 text commands for full control. Features found in large desktop programs including: keyboard input, chain files, headers, multiple copies, etc. Customize to use your printer features. 25-50 cps.

### AutoPen NGA (3.7)

#### With Mailmerge Option \$39.50

Expanded version for merging names, addresses and salutations into form letters from NGA file. With NGA data management system. Prints envelopes and labels. Includes regular AutoPen on same tape.

### AutoPad (5.4K)

#### Spreadsheet \$39.50

Up to 26 columns by 99 rows. Flexible screen and printer output format with titles and footnotes. Convenience features including: calculator, replicate, sort, and special IF/THEN/ELSE, SUM, AVE, MAX, MIN, math, trig and financial functions.

### AutoBase (2K)

#### Relational Data MGT \$29.50

Create forms with up to 16 fields, prompts for data input, keyword search or select records using up to 9 relational criteria, displays records on screen or output to printer or other devices in form, list or label format. AutoPen NGA compatible.

### Book (3.8K)

#### Bookkeeping \$29.50

Convenient single entry tax record system for self employed and small businesses using Schedule C accounts. Screen review and printer output.

### Trip (2K)

#### Expense & Report Log \$29.50

Eight accounts and text notes. Computational features. Screen review and formatted printer output.

### TFile (1.4K)

#### Tape File MGT. System \$29.50

Conveniently review, size, save, delete, and load selected files. Annotated tape directory with printer output for archive records.

*More available, add \$2.00  
Mailing and Handling*

**CSA Software, Box 22261  
Chattanooga, TN 37422  
Phone: (615) 892-2339  
DEALERS INQUIRE**

## LOTTO

```

ELSE 450
470 I=I+1
    : IF I>L THEN 435
    ELSE 445
490 '
495 '---FORM THE CUME DISTRIBUTION---
500 TOT=NX
505 FOR I=1 TO 40
510 N=NO(INDX(I))
515 PRCNT(I)=TOT/NX
    : ' COMPUTE DIST %
520 TOT=TOT-N
    : ' DECREMENT TOTAL
525 NEXT I
530 '
590 '---THE MENU---
600 CLS
    : PRINT @9,TITLE$ " RFB'83"
605 PRINT @90,"<T>ABULATION"
610 PRINT @130,"<R>ANKED BAR PLOT"
615 PRINT @170,"<D>IGIT BAR PLOTS"
620 PRINT @210,"<S>IMULATE DRAWING"
625 PRINT @250,"<E>XIT" ?
    ;
630 GOSUB 8000
    : ' GET THE COMMAND CHAR
635 ' FIND WHERE TO
    GO
640 KB=INSTR("TRDSE",KB$)+1
650 ON KBGOTO 630,1000,2000,3000,800,
    10
800 '----SIMULATE A LOTTO DRAWING---
805 CLS
    : PRINT @9,TITLE$
810 PRINT @88,"== DRAWING SIMULATION =
    ="
815 FOR I=1 TO 6
    : DOT(I)=0
    : NEXT I
820 FOR I=1 TO 6
825 X=RND(1)+.01
    : ' X=A FREQ. DIST. %
830 FOR II=1 TO 40
    : ' TEST FOR MATCH
835 IF X>=PRCNT(II) THEN 840
    ELSE 870
840 FOR IO=1 TO 6
    : ' TEST FOR DUP
845 IF DOT(IO)<>INDX(II) THEN 855
850 I=I-1
    : IO=6
    : NEXT IO
    : GOTO 865
855 NEXT IO

```

# LOTTO

```

860 DOT(I)=INX(II)
      : ' OK-THE ONLY ONE
865 II=40
870 NEXT II
875 NEXT I
880 PRINT @168,"";
885 FOR I=1 TO 6
      : '      SHOW THE LOTTO #S
890 PRINT USING " ## ";DOT(I);
895 NEXT I
      : PRINT ""
900 PRINT @288,"== <SPACE> OR <E>XIT =
      =";
910 KB$=INKEY$
      : ' MORE? OR EXIT
915 IF KB$=" " THEN 800
920 IF KB$="E" THEN 600
      ELSE 910
985 '
990 '---DISPLAY THE TABULATION---
1000 T$="      <##>   ###   #.#####   ###
      ###.#####"
1005 CLS
      : PRINT CMD$TITLE$" RFB'83"
      : TOT=NX
      : Z=37
1010 Z=Z+5
      : IF Z>36 THEN Z=1
      : TOT=NX
1015 PRINT @80,"RANK";
1020 PRINT "      #   FREQ      %      CUME
      %"
1030 POS=80
1035 FOR I=Z TO Z+4
1040 POS=POS+40
1045 PRINT @POS,USING "##";I;
1050 N=NO(INDX(I))
1055 PRINT USING T$;INDX(I);N;N/NX;TOT;
      TOT*100/NX;
1060 TOT=TOT-N
      : '      DECREMENT TOTAL
1065 NEXT I
1070 '---MORE?---
1075 PRINT @0,"";
      : GOSUB 8000
      : ' COMMAND?
1080 IF KB$="E" THEN 600
1085 IF KB$=" " THEN 1010
      ELSE 1075
1090 '
1995 '---DISPLAY LOTTO BAR PLOT---
2000 CLS
      : PRINT TITLE$;
2005 PRINT USING " LAST ## DRAWINGS";

```

Circle No. 40 on Reader Service Card

## AUTO PLOT for the TRS-80 MODEL 100 (16k + )

and the CGP-115 Color Graphic Printer

A picture is worth a thousand words. Now you can produce color graphs of professional quality effortlessly in minutes wherever you go. Plot tabulated data or functions. Choose from line graphs, scatter plots, bar graphs and more. Axes are automatically scaled and labelled. A few keystrokes select from many options, such as plot size, continuous curves and/or separate marks, multiple curves, optional grid overlay, linear or log plots, numeric integration or differentiation. . . A label-maker program lets you add fancy titles or legends. **AUTO PLOT** is written in BASIC and comes on cassette, together with an exceptionally clear 28-page manual.

Why such a small ad for such a fantastic program? By keeping down our overhead, we can offer you **AUTO PLOT** at the unheard-of introductory price of \$49.50

Also available:

AUTO PLOT for TRS-80 Model I/III (48k, 1 disk and CGP-115...\$69.50

AUTO PLOT for TRS-80 Model I/III and EPSON printer with Graphtrax...\$79.50

AUTO PLOT for LN-W80 (+ Hi-Res video graphics)...\$99.50

Please add \$3.00 for shipping and handling. CA residents please add sales tax. Phone orders, VISA and MASTERCARD welcome.

### MENLO SYSTEMS

3790 El Camino Real, Suite 221  
Palo Alto, CA 94306, Tel (415) 856-0727

TRS-80, CGP-115, TM of Tandy Corp.

## THE PORTA STAND



Improved Viewing Angle

Improved Typing Angle

**PORTABLE** - Can be carried  
in your MOD 100 pouch

**VERSATILE** - Can be used  
on lap or desktop.

**For MOD 100 or NEC 8201**

Send check or money  
order for \$12.95 plus  
\$2.00 shipping and handling  
to: PORTA PRO  
P.O. Box 15456, Denver, CO 80215  
dealer inquiries invited

Circle No. 41 on Reader Service Card

## MARINE NAVIGATION

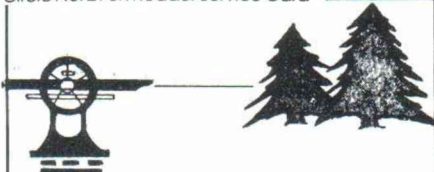
With **DIGITAL NAVIGATOR** you can readily utilize the power of today's most popular notebook computers to perform otherwise time consuming calculations. Programs utilize the large LCD display for complete input and output presentations. User friendly routines have extensive input checking and support optional printed output. Interactive data files eliminate tedious re-entry of data.

**DIGITAL NAVIGATOR** includes Planning routines for Rhumb Line and Great Circle Sailing with Longitude Intercepts, Incremental Distances, and Limiting Latitudes. Celestial routines include Nautical Almanac information for Sun, Moon, Venus, Mars, Jupiter, Saturn, and 58 Stars with navigational accuracies to the year 2100; Complete Sight Reduction with Fixes determined from Noon Sight, two or multiple LOP's; Sunrise and Sunset celestial positions for pre-sight planning. Plane Sailing routines for numerous Vector solutions, automatic Dead Reckoning updates, Course & Speed Made Good, and Distance to Object.

All features extensively presented with examples in bound manual. Programs utilized by Recreational and Merchant Marine personnel.

Order **DIGITAL NAVIGATOR** (Cassette and Manual) by sending \$67.75 (CA Residents \$72.15) via VISA/MC, Check, Money Order or COD. Specify Computer as TRS-80 Model 100 (24K) or NEC 8201A (24K).

**PACIFIC MARINE CORPORATION**  
Dept. W  
2410 E. 5th Street  
Long Beach, CA 90814  
(213) 433-7815



## SURVEY.100

- PORTABLE SURVEY SOFTWARE FOR MODEL 100
- COGO ROUTINES FOR CLOSURES AND STAKE OUTS
- FIELD NOTE REDUCTIONS
- SUBDIVISION CALCULATIONS
- POINTS NUMBERED 1-999,999
- COMPLETE TELECOMMUNICATIONS RECEIVE DATA/SEND RESULTS

CASSETTE DISK or MODEM  
VISA/MC **\$125.00**

**SURVEY SOFTWARE  
ASSOCIATES**

4 MAHER AVENUE  
GREENWICH, CONN. 06830  
203 661-4869

## LOTTO

```

      DRWN0;
2010 '
2015 II=0
      : FOR I=0 TO 239 STEP 6
2020 II=II+1
      : XO=35-NO(INDX(II))

2025 YO=I
      : '
      MAKE BAR PLOTS
2030 LINE (YO,XO)-(YO+4,35),1,BF
2035 N9$=RIGHT$(STR$(INDX(II)),2)
2040 IF INDX(II)<10 THEN N9$=
      "0"+RIGHT$(N9$,1)

2043 '
      MAKE THE NUMBER
      LINE
2045 PRINT @199+II,LEFT$(N9$,1);
2050 PRINT @239+II,RIGHT$(N9$,1);
2055 FOR IO=0 TO 1
2060 PSET (2+I,37+IO)
2065 NEXT IO
2070 NEXT I
2080 PRINT @288,"==== PRESS <E> TO
      EXIT ==== ";
2085 GOSUB 8000
      : '
      COMMAND?
2090 IF KB$="E" THEN 600
      ELSE 2085
2990 '
2995 '---DISPLAY DIGIT BAR PLOTS---
3000 '
3010 KB=0
3020 CLS
      : PRINT TITLE$;
      : II=0
3030 PRINT USING " LAST ## DRAWINGS";
      DRWN0;
3040 '
3050 FOR I=0 TO 239 STEP 6
3055 II=II+1
      : XO=35-DOT(KB,II)
3060 YO=I
      : '
      MAKE BAR PLOTS
3065 LINE (YO,XO)-(YO+4,35),1,BF
3070 N9$=RIGHT$(STR$(II),2)
3075 IF II<10 THEN N9$="0"+RIGHT$(N9$,
      1)
3078 '
      MAKE THE NUMBER LINE
3080 PRINT @199+II,LEFT$(N9$,1);
3085 PRINT @239+II,RIGHT$(N9$,1);
3090 FOR IO=0 TO 1

```

```

3095 PSET (2+I,37+I0)
3100 NEXT I0
3110 NEXT I
3115 PRINT @280,"== BAR PLOT == DIGIT";
3120 PRINT "      <E>XIT OR # ";

3125 PRINT @301,"#";KB;
3130 PRINT @318,"";
      : GOSUB 8000
      : 'COMMAND?

3135 ' SEARCH FOR DIGIT OR WHERE TO GO
3140 KB=INSTR("0123456E",KB$)-1
3150 IF KB=-1 THEN 3130
3160 IF KB=7 THEN 600
      ELSE 3020

3900 '
4000 '--- NUMBER OF DRAWINGS?---
4020 GOSUB 8000
      : ' CALL RON'S INKEY$
4025 IF KB$=CHR$(13) THEN RETURN
4030 IF KB$=BKUP$ THEN 4040
      ELSE 4060
4040 IF LEN(NO$)>0 THEN 4050
      ELSE 4060
4050 PRINT KB$;" ";KB$;
      : NO$=MID$(NO$,1,LEN(NO$)-1)
4055 GOTO 4020
4060 IF KB$<" " OR KB$>CHR$(126) THEN
      4020
4070 IF LEN(NO$)=LGTH THEN 4020
4080 NO$=NO$+KB$
      : PRINT KB$;
      : GOTO 4020

7790 '
7795 '---RON'S INKEY---
8000 KR$(0)=CHR$(239)
      : KR$(1)=" "
      : CT=1
      : BKUP$=CHR$(8)
8005 CT=1
      : 'RON'S INKEY
8010 PRINT KR$(CT/10)BKUP$;
      : CT=CT+1
      : KB$=INKEY$
8015 IF KB$<>" " THEN PRINT " "BKUP$;
      : RETURN
8020 IF CT>19 THEN 8000
      ELSE 8010
9000 '---END OF PROGRAM---

```

## POWER PROP



- ▲ Uses D size batteries that last longer than AA size
- ▲ Totally portable power supply
- ▲ Longer use away from AC source
- ▲ Less costly to use than built-in batteries
- ▲ Provides adjustable viewing angle

\$12.95 each 3 or more \$9.95 each  
add \$2.50 postage & handling  
TN residents add 7.25% sales tax  
NO C.O.D.'S

Please allow 4 to 6 weeks for delivery  
(Batteries not included)

**WAGONER INNOVATIONS**  
P.O. BOX 330  
OOLTEWAH, TN 37363

## ADDRESSER

No labels! Personalized, easy to use.  
Addresses business & personal letter heads,  
long & short envelopes, with an option to  
skip return address. Uses addresses stored  
in "ADRS. DO" file.

**\$25.00**

## SPELLER

Corrects spelling & typographical errors of  
"TEXT. DO" files.

**\$40.00**

## PSYCHI

An expert system which writes psychiatric  
evaluations

**\$50.00**

All programs come on cassettes with  
documentation

SOFTMATE

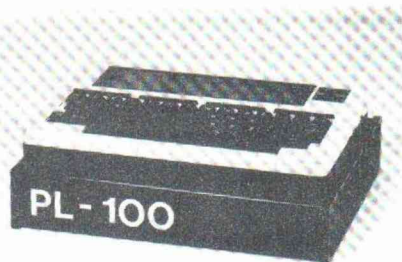
P.O. Box 15157

Portland, Or. 97215-9998

(503) 238-1490

## EXPANSION TO GO

Battery powered interface for the Model 100. Gives Analog and Digital I/O capabilities to your Radio Shack or NEC portable. Whether in the lab or in the field, Data Acquisition and Process Control are now more affordable than ever. Easy to program using BASIC input and output statements.



### Complete PL-100 System \$498 includes:

- Expansion Chassis (holds 3 boards)
- Combination I/O board with
  - 16 Channel 8 Bit Analog Input
  - 4 Channel 8 Bit Analog Output
  - 4 Analog Level Sense Inputs
  - 16 Bits Digital Output
  - 16 Bits Digital Input
- Battery Charger / AC Adapter
- 2 Empty expansion slots

- Uses rechargeable batteries and provides power to the Model 100
- Expansion boards available:
  - High Accuracy 12 Bit Analog I/O
  - 16 Bit Digital I/O
  - Combination Analog & Digital I/O

### ELEXOR ASSOCIATES

P.O. Box 246  
Morris Plains, N.J. 07950  
(201) 299-1615

Exhibit 1. LOTDAT.DO File.

```

37,26,40,18,22,30
15,06,27,04,28,29
03,25,27,11,06,04
36,04,20,27,18,02
12,38,34,05,13,07
31,04,15,22,10,23
28,26,33,16,20,35
17,14,24,39,09,08
14,25,12,33,39,24
30,01,11,39,09,04
27,29,10,33,14,25
28,02,30,25,11,12
40,38,20,09,12,29
14,12,09,15,35,06
33,04,37,15,39,27
16,28,30,08,25,03
09,40,11,10,37,26
02,07,11,16,22,32
04,08,19,20,21,38
06,08,11,30,32,39
11,12,15,19,22,32
03,04,20,29,32,39
01,08,20,23,26,34
03,09,17,18,36,40
07,18,20,28,31,39
14,20,28,29,31,40
05,08,10,26,32,39
01,13,14,25,33,35
03,15,27,28,34,35
04,07,09,18,25,28
09,14,22,27,34,35
14,23,26,28,32,39
07,09,23,24,28,36
08,10,11,24,34,37
05,06,09,20,21,37
02,21,25,26,35,37
01,22,29,30,36,37
06,17,27,32,37,40
08,14,20,29,33,40
06,12,19,20,33,38
02,06,08,16,25,37
12,16,22,31,34,40
03,11,12,24,25,34
15,17,19,30,33,39
03,09,17,18,22,24
05,08,17,26,39,40
05,06,14,21,31,39
    
```

# FORTH

## 79 STANDARD

now available on the  
TRS-80 Model 100  
and the  
NEC PC-8201A

American Micro Products, Inc.  
705 N. Bowser Richardson, TX 75081  
(214) 238-1815

# The Portable Accountant

Accounting System for the Model 100

- Allows More Time for Professional Services
- Improve Report Turnaround
- Speed Client Writeups
- Reduce Errors

The PORTABLE ACCOUNTANT provides a fully integrated accounting system for any small business featuring:

Cash Disbursements Journals  
Cash Receipts Journals  
General Journals  
Detailed General Ledger

Trial Balance  
Automated Backup  
Automated Balance Forward

## Mail to:

## The Portable Accountant

**FACS, Inc.**

Box 2132, White Flint Mall, Kensington, Maryland 20895



☐ Enclosed is my check for \$99.95.\*

☐ Please charge \$99.95\* to my

My Model 100 is a:

☐ 8K ☐ 24K ☐ 32K System

☐ ☐

Account # \_\_\_\_\_

Signature \_\_\_\_\_

Exp. Date \_\_\_\_\_

## Ship to:

Name \_\_\_\_\_

Street \_\_\_\_\_

City/State/Zip \_\_\_\_\_

# 8K RAM

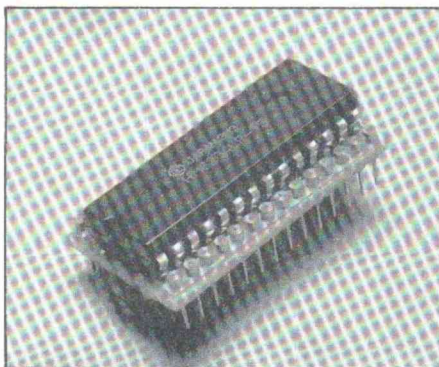
# MEMORY MODULES

**EXPANSION RAM FOR  
TRS-80 MODEL 100,  
NEC 8201 AND OLIVETTI M10  
PORTABLE COMPUTERS**

**\$64.95 Each/3 or more \$59.95 Each**

- Exact replacement ■ Easy to install
- Installation instructions included
- High quality manufacturing ■ warranty included ■ uses 50% less back up power than other chips

DEALER INQUIRIES WELCOME  
TRS-80 IS A TRADEMARK OF TANDY CORP.



**P.G.  
DESIGN  
ELECTRONICS, INC.**

66040 GRATIOT, RICHMOND, MICH. 48062 • (313)727-2744

Circle No. 48 on Reader Service Card

# BARGAIN PROGRAMS

## SMALLTALK

- Transfer files to and from your Commodore 64 or your IBM PC using a null modem cable (not included)

**\$19.95**

## LAPWARMER GAMES

- Six game series
- Number Challenge      Deflection
- Memory Challenge      Repeater
- Biorhythm              Who Buys??

**\$19.95**

## DIALTALK

- Transfer files to and from your IBM PC remotely using the telephone lines
- IBM operates unattended after startup
- Access controlled by your secret user ID and password
- Optional event logging with reporting capabilities
- Optional echoing to screen or printer
- Support for either smart or dumb modems (not included)

**\$29.95**

☐ SMALLTALK      Check one  
                          \$19.95 each      Check one  
  
☐ DIALTALK      Check one  
                          \$29.95 each  
  
☐ LAPWARMER GAME SERIES  
                          \$19.95 each

☐ IBM PC      ☐ Commodore 64  
☐ M100      ☐ PC-8201A  
  
☐ M100      ☐ PC-8201A

\$\_\_\_\_\_ Total Purchased  
 \$\_\_\_\_\_ Ct. Residents add 7½% sales tax  
 \$3.00 x Number of purchases = \$\_\_\_\_\_ Handling Charges  
 \$\_\_\_\_\_ Total

NAME \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 PAYMENT METHOD \_\_\_\_\_ CHECK \_\_\_\_\_ VISA \_\_\_\_\_ MASTERCARD  
 CARD NUMBER \_\_\_\_\_ EXP DATE \_\_\_\_\_  
 SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

MAIL TO: Key Solutions, Inc.  
 19 Silvermine Road  
 New Canaan, CT 06840

MAIL ORDERS ONLY

# END USER

PETER STANWYCK



## TANDY SELLS CHEVIES OF COMPUTER INDUSTRY

**T**his is about Radio Shack. For the vampires among us who were anticipating a blood letting, you may be disappointed. I like Radio Shack ... sort of. There's plenty about it which could be improved. But as a place to buy computer stuff, it's not that bad.

Among the majors in the marketplace, it's above the rest in attempting to address the actual needs of computer customers. Radio Shack doesn't fit my style, nor does it quite fit into the public's current perception of high-tech performance. Let's face it, Radio Shack is the Chevrolet of the computer industry, when others claim to sell Cadillacs or Porsches.

This nation always has needed a good Chevrolet, and eventually the media and the public will come to understand that the standard applies to

computers as well. The snazziest and the fastest are only exceeded by the newest as the dominant themes by which computers are sold. In those categories Radio Shack doesn't fare well.

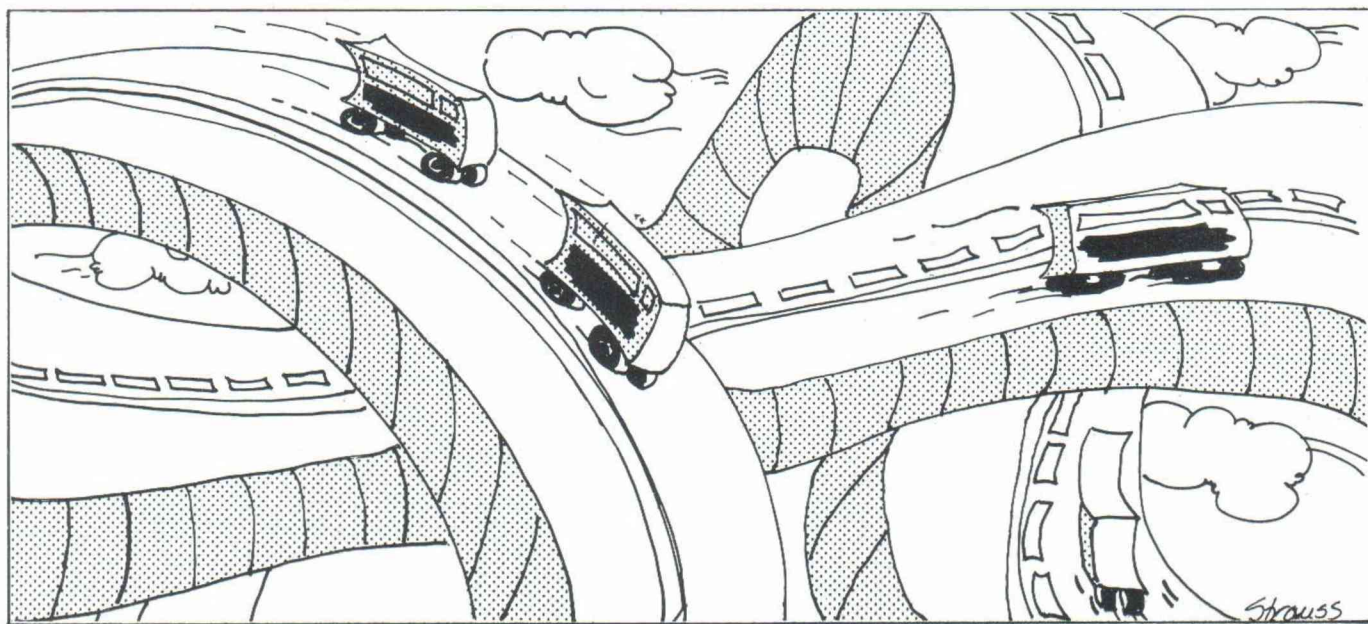
**WORKABLE COMBO.** There are four areas which attract me to Radio Shack. In absolute terms their documentation is good, and by comparison, it's superior. Generally it's written for the comprehension of the user and in plain English. Their computer, their documentation, and a human are a workable combination, and that's often not the case.

As a computer novice, with a liberal arts background, I was able to teach myself Basic programming using only the Model I and the Radio Shack-supplied Basic workbook. The fact that during that period I became reclusive

and hostile, was separated and divorced, shouldn't be blamed solely on Radio Shack.

In past columns I've referred to the end-user loop caused by separation of dealer, hardware, and software vendor. At Radio Shack, the three are combined into one which makes it more difficult to pass the buck, and the user has the added benefit of feeling oppressed by one corporate giant instead of three.

**NO FRILLS.** There's at least one knowledgeable individual at each of Radio Shack's dedicated computer outlets. So if you know what question to ask, you usually can get a reliable answer. Unfortunately, even for their computers, a Radio Shack transaction still has the aroma of cash and carry, and it's becoming obnoxious to have to report my name and address each time I buy an 89-cent battery.



Radio Shack's best user quality is its equipment tends to fulfill user need without the bells and whistles of excess capability. It makes their products seem less attractive when in fact they're better suited to the more mundane computer task of everyday use. I also use a 16-bit Victor 9000 with a 10 megabyte hard disk. In every category of computer comparison the Victor 9000 is a vastly superior product to the Model I.

However, there's no relational data base need of my small law office which couldn't be effectively performed in acceptable time by the Model I. Word processing is much better on more sophisticated equipment. But for all other functions the difference between the oldest technology, the Model I, and the newest technology, the Victor 9000, isn't one of necessity.

It's an oddity of the computer marketplace that new users, especially small businesses, are initiated at the front end where the sophistication, technology, and capability far exceed actual need. When you only have 250 records to sort, the difference between the fastest and slowest computer is still less time than a trip to the water fountain.

**THE GOLD STAR.** The final area of Radio Shack gold stars is the Model 100 itself. The 100 was bold, but wasn't overdone. It has triggered a dramatic shift in the application of computer power by giving it actual portability. The Osborne-type computer didn't deliver promised portability, but only made it a little easier to lug the sucker home.

The 100 has made the computer a personal tool by allowing it to go wherever a person is and not requiring a person to go to the computer. In my office, in court, on the beach, in bath tubs, on planes, in bed, in the elevator, at the grocery... the 100 can be and has been seen.

Even with a positive attitude toward Radio Shack there's still plenty to complain about. However, it's time for consumers to grow up when it comes to disapproval.

**TWO TO TANGO.** Radio Shack is a corporate Goliath and as such, it has its agenda and decision-making apparatus. Radio Shack doesn't want to get in

a hot tub with us; all they want is to sell computers and make a profit.

Every consumer transaction has at least two players, and each has the power to say no. If the consumer proceeds without being informed, that doesn't make the seller a villain, but instead makes the consumer stupid. The morality of Radio Shack's corporate policy isn't any more at issue than the morality of your purchasing decisions. They're both self-serving, as they should be.

I'm not condoning deceptive or predatory practices. In my experience in the computer marketplace and as a lawyer, far more problems result from ignorance than deception. As a lawyer I can do something about deception; as a consumer I can do something about ignorance.

What Radio Shack must understand is it's perfectly appropriate to expose consumers to the full consequences of their decisions, so like Radio Shack, the consumer can make a smart decision based on self-interest. Major User Rule: If you have to describe what you thought was the case by beginning with "I assumed," then you blew it. Remember: ASS-U-ME.

## Gn-[ ]Bq\_%r7IjmYY3@nxmh \*

Fully integrated security program, SECURE for the Model 100, provides three-level file protection.

### SECURE features:

- Excellent password LOCK prevents unauthorized use of your computer.
- LOCK can not be defeated by Break or Reset.
- SCRAMBLE function encrypts and decrypts text files using a user-supplied keyword — over 100,000,000,000,000 combinations. \*Protect Valuable Data!
- Encrypted files retain full ASCII compatibility and can be Emailed.
- Built-in INVISI function enables hiding valuable files from the Menu.
- All Machine Code, only 865 bytes.

Price: \$39.95

includes cassette and manual  
Add \$2.00 shipping and handling.  
Pa. residents add 6% sales tax.

Check, money order, Visa, or MasterCard accepted.



**SECURE SYSTEMS**

INCORPORATED

P.O. BOX 30 • BLUE BELL, PENNSYLVANIA 19422

(215) 925-2292 CIS ID-71256,545

## NEW! IMPROVED OPERATING SYSTEM



**HOLMES PORTABLE MICRO DRIVE**  
ENGINEERING, INC.



High Speed Data Transfer  
Battery Powered with Charger  
No Modification to Model 100  
Saves Text Files and Programs  
Uses Built-in Telecom Mode

**MODEL 100 PMD-100** ..... \$369.50

Add \$6.50 Shipping, Includes: PMD-100 Drive,  
3 Wafers, AC Adaptor/Battery Charger,  
Power Cable, Manual, PMD User Group Membership

**MODEL 100 IM-100**  
**8K RAM Modules** ..... \$79.50

**PMD-100 Owners Manual** ..... \$4.95

### MICRO WAFER

5 ft	.....	\$3.50
10 ft	.....	\$3.50
20 ft	.....	\$4.00
35 ft	.....	\$4.00
50 ft	.....	\$4.50

### WAFERS

Wafers are the same as used in Model I ESF.  
Also compatible with OLIVETTI MTU-231,  
Royal and ADLER Tape Drives, and Structure  
Design SD-2024 PAL Programmer, Stringy  
Floppy for TIMEX 1000 and 1500.

### A&J Micro Drive

1050 E. Duane Ave., Suite I  
Sunnyvale, CA 94086  
(408) 732-9292

Authorized Distributor for  
Exatron and Holmes

Send \$4.95 for Owners Manual and more information

- ☐ Check or Money Order Enclosed ☐ C.O.D. add \$1.65  
☐ U.P.S. Shipping cost, add \$3.00, unless otherwise specified  
☐ VISA ☐ MASTERCARD ☐ CA residents add 6.5% sales tax

Card # \_\_\_\_\_ Exp. date \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

**HERE TODAY.** Rumor has it a second generation Model 100 is around some corner. Radio Shack is mum on how distant in the future, not wanting to pull an Osborne. I can understand Radio Shack's point of view, as they don't want to stop sales of the 100 to those who might prefer to wait for the sequel. I also can understand the reluctance of consumers to pay \$800 for a fully-decked 100, only to find out a week later that a Model 200 costs a thousand dollars, is twice as good, and is forcing the 100 to be closed out at a huge discount. It's the classic conundrum of the computer marketplace.

The automobile industry is far more stable. Product and price changes are more moderate and predictable, to say nothing of traditional model years. It's much less likely the consumer is going to wake up the next morning to news that makes a buyer feel stupid and mad. Imagine how much better it'd be for the user if the computer industry had brand-name product consistency, together with predictable price fluctuation and model cycles, and a viable market for used equipment.

The other side is the auto industry has better customers. Most know how

to drive and have a better idea of what they need. For the present I've no solution except to say, "Seller be fair; buyer beware!"

**SOME CONSIDERATIONS.** There are some negative aspects of Radio Shack's 100 marketplace that consumers should consider. For the advertised purchase price the 100 comes with an impressive array of capabilities. However, many of these capabilities, even primary ones, aren't useable unless you obtain additional products at extra expense.

For example, you can't plug it in unless you pay extra: (AC adapter, \$5.95); you can't use the printer capability unless you pay extra (print cable, \$14.95); you can't use the direct-connect modem unless you pay extra (modem cable, \$19.95); you can't use tape storage without paying extra (cable and recorder, \$49.95).

Although Radio Shack characterizes these as options, in reality each is fundamental to the primary capabilities of the 100.

In making a decision as to what computer to own, like marriage, consider it's a commitment with long-range con-

sequences, where you'll be subject to much temptation and opportunity for infidelity. It's vital that you evaluate the overall expense and not just the expense of the centerpiece.

Also obvious but easily forgotten: Decide if you can afford it after you remember to include sales tax, not before. In Oakland, CA, "I guess I can afford \$1000," translates to \$1065. Whenever a price is quoted, ask the salesperson "what else will I need, and how much is that with tax." Hear it all before you make your decision!

Finally, Radio Shack hasn't been impressive with its support of the 100. Their Disk-Video interface (\$799) isn't super, and their software selection is meager, not very good, and expensive. There's a developing market for such products from other vendors but if you're use to Apple and IBM, you're going to find the pickings pretty sparse.

**BUY SMART.** So Tandy, alias Radio Shack, isn't perfect. The point is for the customer to shop wisely. Again, like marriage, don't be afraid to get into it, but do so with your eyes open. ◀

## SAVE COST AND EXPAND YOUR MODEL 100 & 8201A

### COST-SAVING

#### Memory Upgrading Kit for Model 100 & 8201A

8K Memory Module	\$ 69.95
16K Memory Module	\$125.00
32K Memory Module	\$250.00

#### FOR 8201A

PC8201A	\$449.00
8K Byte RAM	\$ 59.00
RAM Cartridge 32K	\$280.00
Mini Floppy Disk Drive Adapter	\$135.00
Bar Code Reader	\$135.00

#### FOR MODEL 100 & 8201A

GP-IB (IEEE-488) Bus Adapter	\$300.00
------------------------------	----------

With Controller/Talker/Listener  
Command Interpreter Method

### I.O. DataTech

Phone (212) 522-4943  
(212) 875-0826  
48-60, 38th St.  
L.I. City, NY 11101

TRS 80 Model 100. Trademark of Tandy Corporation  
NEC-9201A. Trademark of NEC

# TRS-80

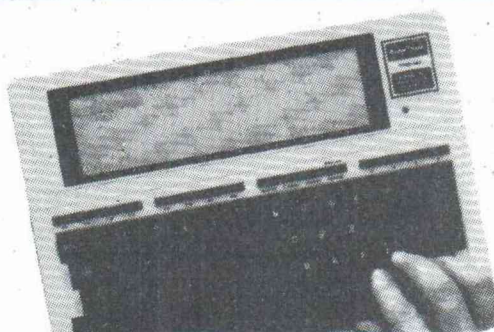
## ALWAYS AT SALE PRICES



**WE SHIP  
FAST!**

DFW COMPUTER CENTER  
326 MAIN ST., GRAPEVINE  
TEXAS 76051 — (817) 481-7283

OUR TRS-80s Have the Radio Shack warranty



To get YOUR SALE price CALL:

## 1-800-433-SALE

# BEFORE YOU MANAGE YOUR RAM, KNOW WHAT'S IN IT

If you want a productive relationship with your Model 100, RAM management is a necessity. Here's a tool to make that job easier.

By RONALD F. BALONIS

**T**he Model 100. It will make you a better manager. If you want it to really work for you, you have to learn how to work with and manage its RAM. But, to efficiently manage its RAM, you need to know how long your files and programs are. Here's a utility program to measure your files.

RAMDIR.BA displays a directory of the document and Basic files and how many bytes each uses of the Model 100's RAM. It's short. Program listing 1 is 1332 bytes, and even less without spaces and remarks. And, it's easy to use, just run it and in a couple of seconds the files and their lengths are displayed, 10 at a time.

```

10 'RAMDIR.BA RAM DIRECTORY'
20 CLEAR 200
   : 'Ronald F. Balonis 7/21/84
30 DEFINTI-M
   : F$=""
   : DIM F$(20),F(20)
40 TLE$="+++ RAM File Directory +++"
50 NOS$="\ \.\\] = ##### "
   : FO$=""
100 CLS
   : PRINT @7,TLE$
   : '--Sign on
105 FX$=CHR$(192)
   : FY$="DO"
110 X=VARPTR(FO$)
   : POKE X,240
115 POKE X+1,174
   : POKE X+2,249
   : I=0
120 I=INSTR(I+1,FO$,FX$)
125 IF I=0 THEN 160
130 F$=MID$(FO$,I+1,10)
135 IF MID$(F$,9,2)=FY$ THEN 140
   ELSE 120
140 II=II+1
   : F$(II)=F$
145 IL=ASC(MID$(F$(II),1,1))
150 IH=ASC(MID$(F$(II),2,1))
155 F(II)=256*IH+IL
   : GOTO 120
160 IF FX$=CHR$(128) THEN 200
165 FX$=CHR$(128)
   : FY$="BA"
   : GOTO 110
200 M=II
   : '--Rank Files
210 M=M/2
   : IF M<=0 THEN 300
220 FOR J=1 TO II-M
   : IJ=J
230 IM=IJ+M
240 IF F(IM)>=F(IJ) THEN 290
250 F=F(IJ)
   : F$=F$(IJ)
260 F(IJ)=F(IM)
   : F$(IJ)=F$(IM)
270 F(IM)=F
   : F$(IM)=F$
280 IJ=IJ-M
   : IF IJ>=1 THEN 230
290 NEXT J
   : GOTO 210
300 IL=ASC(MID$(F$(II),1,1))
   : 'Find end
310 IH=ASC(MID$(F$(II),2,1))
   : 'of last
320 FX$=CHR$(0)+CHR$(0)+CHR$(0)
330 IF MID$(F$(II),9,2)="DO" THEN FX$=
   CHR$(26)
400 FOR XI=IH*256+IL TO HIMEM STEP
   240
410 IH=XI/256
   : IL=XI-IH*256
420 X=VARPTR(FO$)
   : POKE X,240
430 POKE X+1,IL
   : POKE X+2,IH
440 I=INSTR(FO$,FX$)
   : IF I=0 THEN 460
450 F(II+1)=I+XI+LEN(FX$)-1
   : XI=HIMEM
460 NEXT XI
500 II=1
   : I2=10
   : IF II<=10 THEN I2=II
505 CLS
   : PRINT @7,TLE$
   : '--Ram Dir
510 FOR I=I1 TO I2
515 F$=MID$(F$(I),3,6)
520 FY$=RIGHT$(F$(I),2)
525 PRINT USING NOS;F$;FY$;F
   (I+1)-F(I);
530 NEXT I
   : PRINT
535 PRINT @288,"++++ Press Spacebar
   +++++";
540 IF INKEY$="" THEN 540
545 IF I=II+1 THEN MENU
550 I1=I
   : I2=II
   : GOTO 505

```

**HOW THEY'RE STORED.** RAMDIR.BA takes advantage of the Model 100's dynamic file management routine. The Model 100's files are always arranged according to type, sequentially from the bottom of RAM: Basic, document, and then, machine-language files. To compute the lengths of the files in RAM, you only need to read the directory addresses for all the files, then subtract them to get each file's length. See "Tandytalk" in January's *Portable 100* for more information on how things are arranged in RAM.

Five sections make up RAMDIR.BA's program:

- Variable initialization, lines 10 to 60;
- Read the Model 100 directory, lines 100 to 190;
- Sort the directory start address, lines 200 to 290;
- Find the end of the last file in RAM routine, lines 300 to 470; and
- The RAM file display routine, lines 500 to 550.

Of these only the middle three need explaining.

The read the directory routine makes a string (F0\$) of the RAM directory area of RAM by poking the address into F0\$'s VARPTR. Then the INSTR function searches for all document files and then for all Basic files. Each time it finds a file; it puts the file's name and address in the F and F\$ arrays.

**SHELL SORT.** When all the files are found and counted, they are ranked using a version of D. H. Shell's sort algorithm.

Then a routine searches for the end of the last file in RAM. Again the routine makes a string of the last file (F0\$) and the INSTR function searches for its end (F\$). For document files the end is decimal 26, and for Basic files it is three decimal zeros. Then on to the display module.

RAMDIR won't eliminate OM errors for you, only unlimited RAM can do that. But it will save you time and by knowing the size of your files, you and your Model 100 will have a more productive relationship. ◀

3620 ~ 244 Street, Langley, B.C. V3A 4P6



Hardware, Software, Accessories

TRS Model 100, Olivetti M10, NEC PC8201A

Telephone 604-856-8858

VISA ~ Master Charge

## Canada Portable Computer

### MODEL 100 CASINO VIDEO POKER GAME



*Just like a video poker machine!!*

*Deal, discard, and draw new cards.*

*Records your bet and tallies up winnings.*

*Displays actual cards and suit.*

*Good graphics and music too.*



You will be addicted! So will all your family and friends!



Cassette and instructions: **ONLY \$24.95!!!**



Send money order — we pay U.S. postage — to

Hedelund Engineering • P.O.B. 26044, Las Vegas, NV 98126

Circle No. 25 on Reader Service Card

## CRYPTEASE

**Hundreds of cryptograms & a tool to take the tedium out of solving them, leaving the challenge in. Even people who never do a daily newspaper puzzle love to solve cryptograms with CRYPTASE! Several levels of difficulty — kids can use it!**

Available on cassette for the 16K+ Model 100

**\$19.95 Cryptease & 100+ sayings**

**\$19.95 500 additional sayings**

T, E ERY DAY AT LEAST, T EAR A  
mlc mvpdx, cbcki egi gx scgfx, xm dcgk g  
L TTLE S , READ A D P EM, SEE A  
sjxxsc fmlp, kce g pmme rmcw, fcc g hjlc  
P CT RE A D DEC DE A SRY .- ET E/MAK  
rjtxkc gle ectmec g fgijlp.- pmxdc/wgo

**MAK, Ltd.**  
PO Box 158  
Spring City  
PA 19475

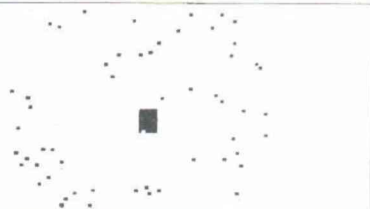
**\$29.95 for both S/H—\$2.50**

Please add 6% sales tax in PA

Circle No. 26 on Reader Service Card

## NAVIGATORS - STUDENTS - STARGAZERS

```
DA 08/25/1985
UT 19:23:41
LA 42°50.6'N
LO 070°20.8'W
FV 100' MA 2.1
ID Polaris
AZ 359°38.2'T
AL 042°04.8'
```



ASTRO creates a display of the sky, as you look at it from any place on earth, for any date and time. ASTRO quickly computes the apparent positions of 179 celestial bodies including the Sun, Moon, planets, and navigational stars. You identify any star or body simply by moving the cursor onto it; ASTRO shows name, magnitude, azimuth, and altitude. Manual & Cassette for 24K TRS-80/100.

**\$39.95 + \$2.00 shipping; Visa, MasterCard, or check**

Loquor Enterprises, 3 Heneage Lane, Hanover, NH 03755

Circle No. 27 on Reader Service Card

# SAVING DOOMED FILES AFTER A COLD START

When you're staring at a blank menu where once there was a treasury of RAM files, turn to Dumper.

By RICHARD J. PERRY

**A**fter a cold start, the Model 100 returns to its virgin state and the directory of RAM files is lost (the directory in system RAM is filled with zeros, and only the built-in application-

program names appear listed on the main menu screen).

*But the user's files are really still present in RAM!*

Here's a listing to help you recover


the so-called lost files.

To get your test files back after a cold start, type in program listing 1. Dumper will copy the RAM image into cassette files DUMP1.DO, DUMP2.DO...5050 bytes each.

After this is done, use TEXT to load the files back, one at a time, and edit out any garbage (data from tokenized Basic programs and machine-code files will appear as mostly graphics characters).

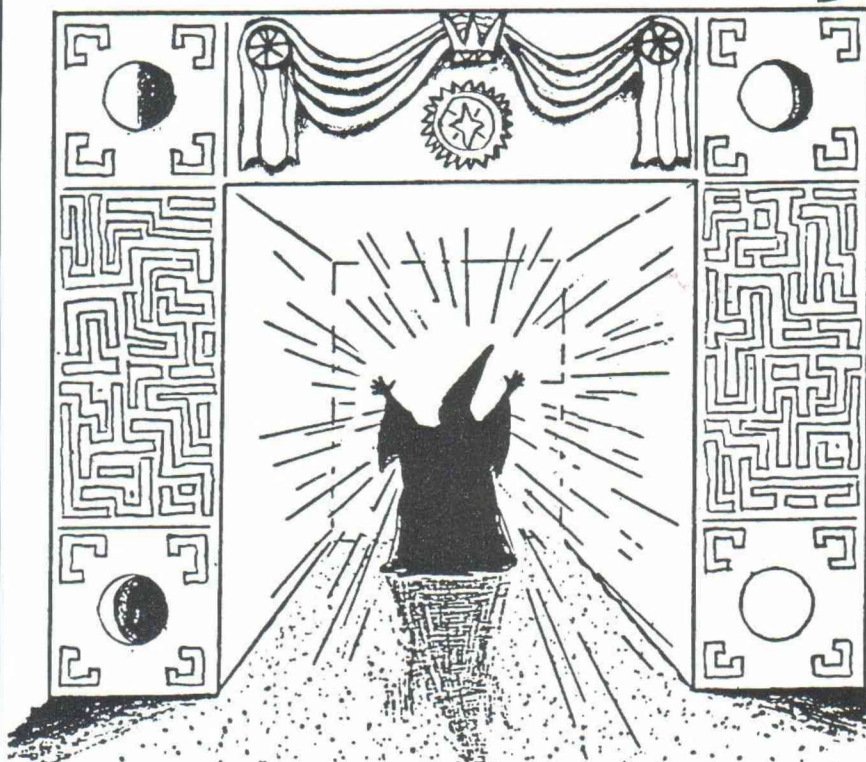
On a 32K machine, Dumper will create six cassette files and require about 12 minutes of tape. Note that the program pauses before starting to write each file to give you a chance to insert a new tape if necessary.

Hopefully, if you regularly back up your files and are careful when POKE-ing around in RAM, you'll never be bothered by the possibility of a cold start. But if you do happen to get a case of the "Jan 01, 1900" blues, Dumper can save you a lot of kilobytes of retyping. ◀



```
5. REM DUMPER.100 by Rick Perry
10 A=PEEK(64192)+256*PEEK(64193)
   : A$="1"
15 BEEP
   : INPUT "Cassette ready ";C$
20 K=0
   : F$="CAS:DUMP"+A$+".DO"
   : OPEN F$ FOR OUTPUT AS 1
25 PRINT "Writing "F$" ..."
30 C=PEEK(A)
   : A=A+1
   : IF C=26 THEN 30
   : REM skip CTRL/z
40 PRINT #1,CHR$(C);
   : K=K+1
50 IF A>MAX RAM THEN BEEP
   : CLOSE
   : PRINT "All done."
   : END
60 IF K>5050 THEN CLOSE
   : A$=CHR$(ASC(A$)+1)
   : GOTO 15
70 GOTO 30
```

# PORTAL OF LIGHT



Long, long ago in a land far away, you were born (in a previous life) as the only child of King Gabrial, beloved ruler of Fortonnia. Your birth was viewed as a great threat to the forces of evil which lurked in the land.

The evil wizard Fondu personified these forces of evil, and he battled to undo the good works of King Gabrial, your father. During your childhood, you were watched by Fondu and his henchmen, who waited for their opportunity.

As you approached your thirteenth birthday, plans were laid by the evil ones to prevent you from ever assuming the throne. They could not kill you — your life force had already grown too strong ...

But they had at their disposal something far worse than death! The infamous and legendary mountain city of Labyrinthia was their domain. Hidden deep in the mountains of Fortonnia, no mortal had ever escaped from its walls.

Labyrinthia consisted of seemingly endless mazes, level upon level, going ever deeper into the mountain of evil. All but the first level of the city was inhabited by fearsome creatures who attacked mortals with no provocation.

The evil ones, with their warped sense of humor, found it amusing to give imprisoned mortals the impression there was some chance of escape. They provided their victims with sources of food, water, and weapons — all the time laughing.

It was this unspeakable fate which Fondu had in mind for you as he watched all of those years. And on your 13th birthday it happened ...

Step into the most unforgettable adventure you've ever played! Incredible 3-D viewport clearly shows the way, while your travels are meticulously mapped out on the left of your screen. Build your characters strength as he battles his way through the city, collecting treasures along the way with which you can buy food, water, and more powerful weapons. Each city has 250 levels, with no two cities the same. Save feature allows you to save the city you're in for continued play.



Rochelle Building  
Department PI  
P.O. Box 1157  
Elizabeth City, NC 27909  
(919) 338-3202  
CIS EMAIL: 75735, 1440

**PORTAL OF LIGHT**  
STOCK NO. ASG - 215

**\$39.95**

Plus \$2.00 shipping  
NC Residents Add  
4.5% Sales Tax

☐ CHECK/M.O. ENCLOSED

CHECK PAYMENT TYPE:

☐ VISA

☐ MASTERCARD

SIGNATURE \_\_\_\_\_ CARD NO. \_\_\_\_\_ EXP. DATE \_\_\_\_\_

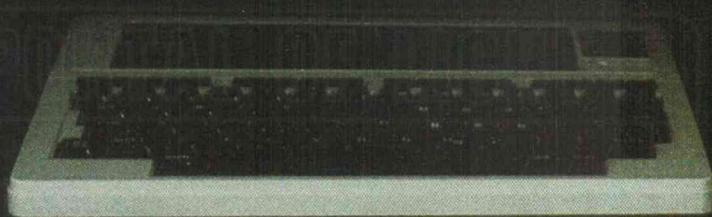
NAME \_\_\_\_\_ COMPANY \_\_\_\_\_ STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE (PROV.) \_\_\_\_\_ ZIP \_\_\_\_\_ PHONE \_\_\_\_\_

SYSTEM REQUIREMENTS:  
MODEL 100 WITH 24K RAM  
DEALER INQUIRIES WELCOME

Portal of Light & Alpine Data Systems, Inc.  
are trademarks of Alpine Data Systems, Inc.  
©1984 Alpine Data Systems, Inc.

**400K ON A SINGLE SIDE...**  
**RECHARGES IN ONE HOUR, THOUSANDS OF**  
**PAGES TRANSFERRED BETWEEN CHARGES.**



Uses the main menu concept. You see the disk directory instantly, arranged on your M-100 screen like your main menu. Just move the widebar cursor and transfer files with a function key.

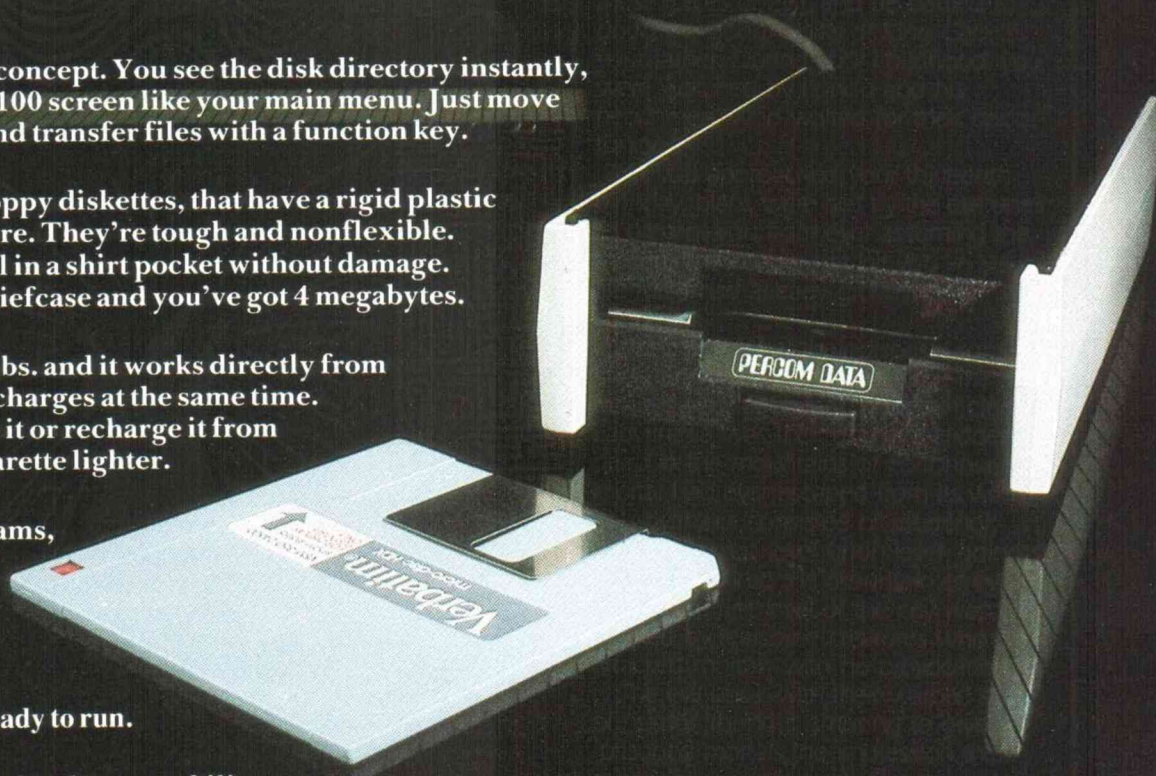
Uses SONY microfloppy diskettes, that have a rigid plastic casing and a metal core. They're tough and nonflexible. You can carry several in a shirt pocket without damage. 10 of these in your briefcase and you've got 4 megabytes.

Drive weighs only 3 lbs. and it works directly from the 110 outlet and recharges at the same time. Also you can operate it or recharge it from your automobile cigarette lighter.

Machine code programs, BASIC programs and documents all are saved and retrieved with no protocol - instantly, ready to run.

Sounds a little expensive, but portability in a disk drive is an engineering feat. It's worth the money to have the power and freedom that this Portable Disk Drive can bring you.

The Disk Drive comes with \$300<sup>00</sup> worth of FREE SOFTWARE! (six programs) including a Random Access Mailing List Database.



**Portable Disk Drive**  
**FOR THE MODEL 100**

**\$599<sup>00</sup>**

**VISA/MASTERCARD/COD**

**PORTABLE COMPUTER SUPPORT GROUP**

11035 Harry Hines Blvd. No. 207, Dallas, Tx. 75229

**1<sup>st</sup> with software for the Model 100**

**CALL 1-214-351-0564**

Circle No. 53 on Reader Service Card

Manufactured by PERCOM Data Corporation. ROM based operating system and access software by Portable Computer Support Group. Mastercard/Visa/COD. PCSC provides hotline software support for Model 100. Call 1-214-351-0564. Available immediately from Portable Computer Support Group. We can deliver to you.

# PORTABLE 100

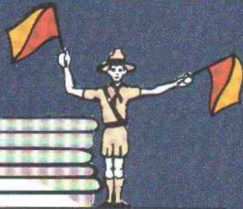


Illustration by Rod McCormick

## ARTICLE INDEX

September, 1983 — August, 1984

Category	Year	Mo.	Pg.	Author	Article Title
BLACK FLAG	1983	12	48	No Author	Invisible Maze Improvements Make for Better Time Display
BLACK FLAG	1983	12	48	No Author	Market-100
BLACK FLAG	1984	02	57	No Author	Bowling Game
BLACK FLAG	1984	02	57	No Author	E-Mailer
BLACK FLAG	1984	02	57	No Author	Music Machine
BOOKS	1984	04	57	Nancy L. Laite	The Radio Shack Notebook Computer
BOOKS	1984	05	76	Terry Kepner	The Idea Book
BOOKS	1984	05	79	Henry Kisor	Hooking In: The Underground Computer Bulletin Board
BOOKS	1984	06	58	David Dunn Thomas	TRS-80 Model 100 Basic Language Lab
BOOKS	1984	07	78	Terry Kepner	The Model 100 Companion
BOOKS	1984	07	80	Nancy L. Laite	Moonlighting with Your Personal Computer
BOOKS	1984	08	55	Terry Kepner	44 Programs for the TRS-80 Model 100
BOTTOM LINE	1984	08	24	Bill Walters	Spectaculator Help and Some Worthwhile Tips on Managing High Mem
BUSCH LEAGUE	1983	09	50	David Busch	A Maze with a Different Twist
BUSCH LEAGUE	1983	10	22	David Busch	An Ancient Strategy Game of Rock Scissors Paper Dons Silicon Clothing
BUSCH LEAGUE	1983	11	36	David Busch	Strike Up a Kegler's Den Inside Your 100
BUSCH LEAGUE	1983	12	49	David Busch	Computer-Assisted Design "Without Any Practical Application"
BUSCH LEAGUE	1984	01	50	David Busch	While Away the Hours Making fortunes that Could Have Been
BUSCH LEAGUE	1984	02	52	David Busch	Test Your Memory and Have Fun with this Memory Stretcher
BUSCH LEAGUE	1984	03	28	David Busch	Bid Against the Computer in this High Brow Art Game
BUSCH LEAGUE	1984	04	28	David Busch	A 100 Helps the Judges at the International Science Fair
BUSCH LEAGUE	1984	05	22	David Busch	Teaching Your 100 to Build a Program Generator
BUSCH LEAGUE	1984	06	18	David Busch	Learn How to Change RAM Files with this Remark Remover
BUSCH LEAGUE	1984	07	18	David Busch	Auto Program — Part 3: Auto-Generate Titles to Your Precious Programs
BUSCH LEAGUE	1984	08	14	David Busch	Auto Program — Part 4: Tabber Cleans Up Sloppy Computer Penmanship
BUSINESS	1983	09	40	Edwin Dethlefsen	Track Your Fortune with Market. 100
BUSINESS	1983	10	48C	Peter Haas	Cash Register without a Cash Draw
COMMUNICATIONS	1983	09	48	C. Bowen & S. Schneider	Tooling the Network Nation in Your Snazzy 100
COMMUNICATIONS	1983	10	51	Jim Hughes	The Portable to Transportable Connection
COMMUNICATIONS	1983	11	41	Jim Cambron	A User's Guide to Bulletin Board Systems
COMMUNICATIONS	1984	04	34	Jerry W. O'Dell	War Games Technique Can Be a Valuable Tool
COMMUNICATIONS	1984	04	46	Henry Kisor	Osborne and WordStar Meet the 100
COMMUNICATIONS	1984	04	52	Richard Butt	Thousands of Data Bases Via One Network
COMMUNICATIONS	1984	06	34	Ronald F. Balonis	Telcom is Good but Software Dialer is Better
COMMUNICATIONS	1984	07	52	Mike Greenly	How the Network Nation Changed an Executive's Life
COMMUNICATIONS	1984	08	38	Richard Butt	Source Offers Vanity Publishers Electronic Resource
COMMUNICATIONS	1984	08	38	Sharon Lerch	A Writer's Colony Like No Other Is a Keystroke Away

# Ask your dealer for the Porta™ series from Skyline—to help you work faster and better!

**PortaCalc™**—Model 100 “electronic spreadsheet” with 14 column by 26 row workspace! Full use of the built-in function keys to save, load, screen print, report print, or to look behind the data at the formulas in use.

Full arithmetic operators including exponentiation, absolute value, integer, summation, and averaging. Calculations are done to 14 digits of precision and displayed up to 9 digits. User selectable decimal place from none through seven—not just one, two or floating! Formula replication is included to allow fast creation of worksheets.

Worksheets may be saved, loaded, or merged using the computer's memory or cassette. Often used templates can be saved in memory for instant recall.

Two powerful utility programs are included with **PortaCalc** at no extra charge! **PortaDex™** is a data exchange program that allows reformatting **PortaCalc** files into the DIF format used by **VisiCalc**. **PortaPrint™** is an enhancement to the Model 100's text editor, adding the ability to adjust left, right, and top margins, and page length. Page numbering, headers, centered lines, flush right justification, new page control, and more.

Comes with extensive documentation in a padded 3-ring binder. Includes tutorial and detailed reference section. Fully illustrated with screen prints, examples and hints. **\$69.95**

**PortaStat™**—Correlation, regression analysis, and descriptive statistics package, designed to be a working tool for today's businessman. Data can be input from cassette, memory, or keyboard. Interactive with **PortaCalc** data files! Thoroughly documented, includes tutorial. **\$44.95**

**PortaFin™**—PV, NPV, FV, annuities, IRR, bond calculations and more! Handles up to 5 different loans or 100 series of cash flows simultaneously. This user-friendly package prompts you for the needed input data, then gives you the answer to your loan or investment problem. Interacts with **PortaCalc** files to avoid time-wasting repetitive data entry. Tutorial, examples, and bibliography included. **\$44.95** (Model 100 only)

**PortaTax™**—A tax planning, forecasting, and strategy program for the tax professional and upper income individuals. Calculates Federal Income Tax using all four possible filing statuses. Allows all sections (i.e. income, deductions, adjustments, and Keogh deductions) to be entered in detail (line by line) or in total. Automatically calculates longterm capital gain exclusion, maximum Keogh contribution, two wage earner adjustment, medical deduction limitations, and casualty loss deduction limitations. Calculates tax using both the tax rate schedules and income averaging, after IT determines whether or not the taxpayer qualifies for averaging and alternative minimum tax. Calculates self employment tax. All items needing to be paid are shown on a recap screen, with hard copy option. Full use of function keys. **\$99.95** (32K RAM recommended).

**PortaMax™**—The powerful “simplex” method of linear programming. Find the optimum “mix” for a given set of constraints. Interacts with **PortaCalc** files to avoid time-wasting repetitive data entry. Tutorial, examples, and bibliography included. **\$44.95**

**Tele-Stock™**—Stock market decision assistance, 12 to 24 hours ahead of the newspaper! Automatically calls the Dow Jones News Service immediately following the close of the market each day, retrieves the market activity for your investments, then displays and prints today's activity, 45 day high, low, close, and volume graph, and return on investment. Improve your investment performance for only **\$59.95** (Model 100 only)

All **Porta** series programs are supplied on cassette and require 24K RAM. Unless otherwise noted, all programs are available for TRS-80 Model 100, NEC 8201, and Olivetti M10. If ordering direct, add \$2.00 shipping and handling per order. Dealer inquiries invited.



Model 100 is a trademark of Tandy Corp. VisiCalc is a trademark of VisiCorp. DIF is a trademark of Software Arts.

# PortaCalc



4510 W. Irving Park Rd. • Chicago, IL 60641 • (312) 286-0762  
24 hr. Modem Order Line (312) 286-9015

Category	Year	Mo.	Pg.	Author	Article Title
COMMUNICATIONS	1984	08	42	Richard S. Ross Jr.	The Model 100 Meets the Big Blue Machine
EDUCATION	1984	03	43	J. Erickson & R.J. Sayre	Get Out From Behind Paperwork Drudgery with Classroom Manager
END TRANSMISSION	1983	09	64	Kerry Leichtman	But Is It Better than a Canoe on a Day Perfect for Fishing?
END TRANSMISSION	1983	10	64	Kerry Leichtman	Southwest Bell Slaps Tariff on Telecomputing
END TRANSMISSION	1983	11	64	Kerry Leichtman	Now's the Time for All Good Persons to Get into Supporting the 100
END TRANSMISSION	1983	12	64	Kerry Leichtman	Exciting Potential in Telelearning's Network University
END TRANSMISSION	1984	01	64	Kerry Leichtman	Air 100: What's All the Shouting About?
END TRANSMISSION	1984	02	72	Kerry Leichtman	The Rabbit of Computer Expo Shows Industry at Childhood's End
END USER	1984	06	88	Peter Stanwyck	Beware a Customer by Any Other Name and the Rise of Big Nerdness
END USER	1984	07	88	Peter Stanwyck	Biting the Hand that Feeds You Is One Way to Lose Weight
END USER	1984	08	80	Peter Stanwyck	CompuServe Imperfect but Packed with Good Ideas and Potential
FULL-DUPLEX	1983	09	10	Terry Kepner	Bug in 100's Basic
FULL-DUPLEX	1983	09	10	Terry Kepner	Foreign Upgrades
FULL-DUPLEX	1983	09	10	Terry Kepner	Loading out the RS232
FULL-DUPLEX	1983	09	12	Terry Kepner	CoCo Conversions Easier than I/III
FULL-DUPLEX	1983	09	12	Terry Kepner	Three to 100 Tapes
FULL-DUPLEX	1983	10	11	Terry Kepner	Bubble Memory Development
FULL-DUPLEX	1983	10	11	Terry Kepner	IPL Program Surprises User
FULL-DUPLEX	1983	10	11	Terry Kepner	Will Heat Hurt 100?
FULL-DUPLEX	1983	10	11	Terry Kepner	Update on Problems with Model 100 Talking 12
FULL-DUPLEX	1983	10	12	Terry Kepner	Clock Problems
FULL-DUPLEX	1983	10	12	Terry Kepner	Fine at Home No Go at Office
FULL-DUPLEX	1983	10	12	Terry Kepner	Mandatory Debug in this Program
FULL-DUPLEX	1983	10	12	Terry Kepner	Tape Recorders
FULL-DUPLEX	1983	10	13	Terry Kepner	Emptying the Paste Buffer
FULL-DUPLEX	1983	10	13	Terry Kepner	Erase All from Cursor Screen Bottom
FULL-DUPLEX	1983	10	13	Terry Kepner	Lowercase on CompuServe
FULL-DUPLEX	1983	10	13	Terry Kepner	The Mystery of the Lost Line
FULL-DUPLEX	1983	11	51	Terry Kepner	Duplex Control Needed
FULL-DUPLEX	1983	11	51	Terry Kepner	Wants Detailed Memory Map
FULL-DUPLEX	1983	11	52	Terry Kepner	How Do You Use Expansion Port?
FULL-DUPLEX	1983	11	52	Terry Kepner	Lantern Battery Kluge Revisited
FULL-DUPLEX	1983	11	52	Terry Kepner	Modem 1200 Problems
FULL-DUPLEX	1983	11	52	Terry Kepner	Technical Manual for Model 100
FULL-DUPLEX	1983	11	53	Terry Kepner	Model 12-Mews Commo Problems
FULL-DUPLEX	1983	11	53	Terry Kepner	More Corrections in Mews Manual
FULL-DUPLEX	1983	12	55	Terry Kepner	Update on the Infamous Clock Changing Program
FULL-DUPLEX	1983	12	55	Terry Kepner	Will X-Rays Aimed at Terrorists Hurt 100?
FULL-DUPLEX	1983	12	55	Terry Kepner	Alien RAM Priced Nice and Easy to Install
FULL-DUPLEX	1983	12	55	Terry Kepner	Dow Jones Difficulties
FULL-DUPLEX	1983	12	57	Terry Kepner	Another Episode in the Tape Woe Saga
FULL-DUPLEX	1983	12	57	Terry Kepner	Screen Care and Lubricants for Model 100
FULL-DUPLEX	1983	12	59	Terry Kepner	Trying to Get 100 and Coco to Talk Together
FULL-DUPLEX	1983	12	59	Terry Kepner	Print-Using Bug Creates Unwanted Minuses
FULL-DUPLEX	1984	01	54	Terry Kepner	Close Encounters of a Strange Kind
FULL-DUPLEX	1984	01	54	Terry Kepner	ESC Key Escapes One Reader
FULL-DUPLEX	1984	01	54	Terry Kepner	Kill Command Knocks'em Dead
FULL-DUPLEX	1984	01	56	Terry Kepner	An Apparent Bug that's No Bug at All
FULL-DUPLEX	1984	01	56	Terry Kepner	Embedding Codes Using a Null
FULL-DUPLEX	1984	02	58	Terry Kepner	Speed Tricks for Choices from a Menu
FULL-DUPLEX	1984	02	58	Terry Kepner	To Make Eagle Fly Set 7-Bit Parameters
FULL-DUPLEX	1984	02	58	Terry Kepner	"SAVE TO:" Command and Embedded CR Are Solution
FULL-DUPLEX	1984	02	60	Terry Kepner	Can Get There from Here with Correct External Modem
FULL-DUPLEX	1984	02	60	Terry Kepner	Correct Dip-Switch Setting Allows Hook-Up
FULL-DUPLEX	1984	02	60	Terry Kepner	Unwanted Characters Hard to Eliminate
FULL-DUPLEX	1984	02	61	Terry Kepner	Sluggish Cursor Cured by Turn-Off or Cold Start
FULL-DUPLEX	1984	03	76	Terry Kepner	Control Codes for Text Have This Reader Puzzled
FULL-DUPLEX	1984	03	76	Terry Kepner	Desire for More Model 100 Technical Software
FULL-DUPLEX	1984	03	76	Terry Kepner	Doctor Wants Cure to Fix 100-Apple Interface III
FULL-DUPLEX	1984	03	76	Terry Kepner	Embedding CHR\$(O) When Printing Text
FULL-DUPLEX	1984	03	76	Terry Kepner	More Problems with Control Codes in Embedded Text
FULL-DUPLEX	1984	04	75	Terry Kepner	Communicating 100 with Model I Easy
FULL-DUPLEX	1984	04	75	Terry Kepner	Low Battery Light Burns Bright When Printer's On
FULL-DUPLEX	1984	04	76	Terry Kepner	A Flip of the Switch Will Allow NEC to Print
FULL-DUPLEX	1984	04	76	Terry Kepner	Leader Losing His Mind Over Loss of Memory
FULL-DUPLEX	1984	04	76	Terry Kepner	Corrected Sequence Will Enable Buffer
FULL-DUPLEX	1984	05	73	Terry Kepner	Speedy Typist
FULL-DUPLEX	1984	05	73	Terry Kepner	To Nicad or Not

# EVERY DISK/VIDEO INTERFACE USER NEEDS THIS PROGRAM.

*DISK-BUDDY manages your disk files with one keystroke!*

The DISK-BUDDY menu is like the M100 command menu except it works on disk files instead of RAM files.

Just position the cursor over the file of your choice and press the function key. It takes one keystroke to:

- Display a disk directory of either drive
- Load a file or program from disk to RAM
- Run a program directly from disk

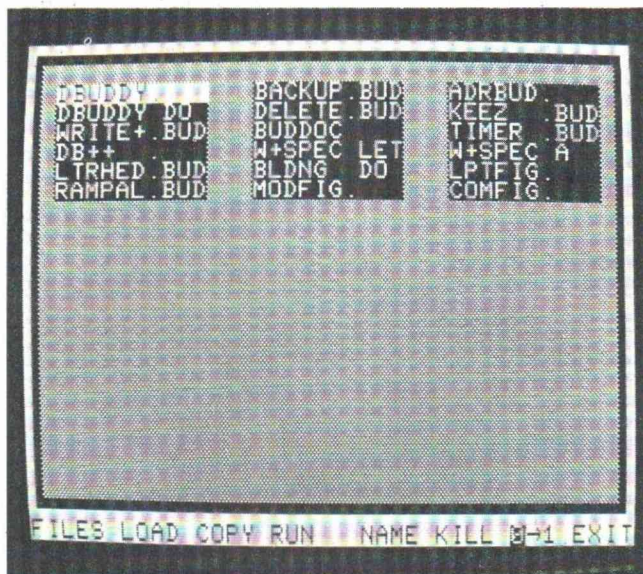
With two keystrokes:

- Delete a file from a disk (the second stroke is for safety)
- Send file of any length (up to the capacity of the disk) to serial port, printer, screen, cassette or another disk drive.

DISK-BUDDY unlocks the power of the M100 operating system. Commands for computer and peripherals, stored on disk, can be sent at the touch of a button.

One touch can ready your printer for word processing, another sets it for BASIC listings.

Change function key configurations instantly. Keep a set of key functions for word processing, telecommunications, editing, programming, etc.



*A typical Disk-Buddy Menu.  
Note the function key labels on the command line.*

## DISK-BUDDY IS A SOFTWARE BUNDLE!

Our package contains several programs, powerful utilities which could be sold separately.

RAM-Pal has many of the same powerful functions as DISK-BUDDY but manages RAM files.

Memory low? ADR.BUD dumps your current ADRS.DO and NOTE.DO files to disk, and optionally deletes them from RAM, with one key stroke, of course. Later, load and save them from the DISK-BUDDY menu; one key stroke each.

DISK-BUDDY works great with programs that use "spec" files and templates. Just keep your favorite models stored on disk. A key touch loads and saves it to RAM, another touch gets you into your application. Changing formats is just as simple: load the new template with a single keystroke.

DISK-BUDDY AND THE DISK-BUDDY BUNDLE, INCLUDING RAM-Pal, ADR.BUD, TIMER.BUD and other demonstration programs are shipped on disk with full instructions, plus information on interfacing your own programs with DISK-BUDDY. Turn your M100 into a powerful, friendly desk top system! Tips for driving your M100 are included.

# BuddySystems

TO ORDER: Send check or money order for \$39.95 (plus \$2.00 postage and handling) to BUDDY-SYSTEMS, 220 West 24th Street, New York, NY 10011 or phone (212) 243-2129 for C.O.D.

For TRS-80 Model 100, 24K RAM, DISK/VIDEO INTERFACE, WITH MONITOR, TV, OR LCD.

Circle No. 19 on Reader Service Card

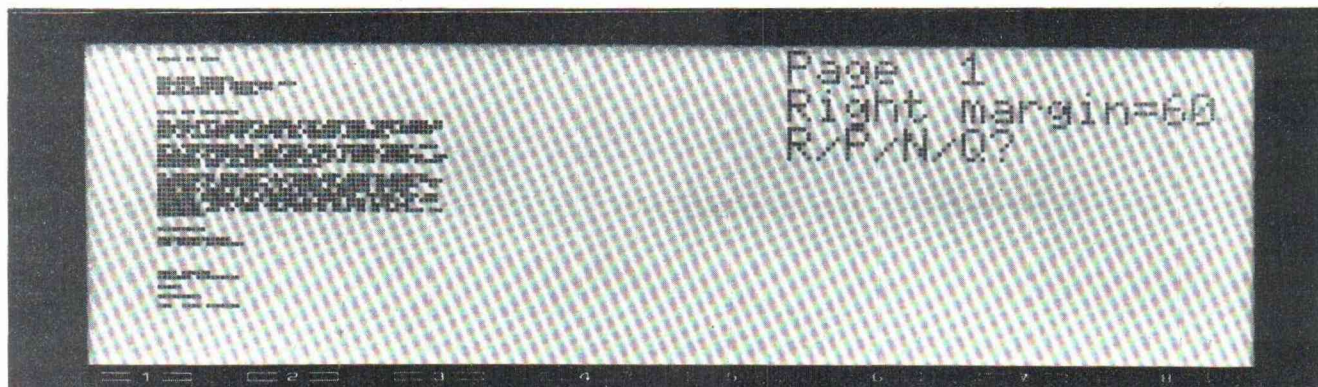
Category	Year	Mo.	Pg.	Author	Article Title
FULL-DUPLEX	1984	05	75	Terry Kepner	Wants Glossary
FULL-DUPLEX	1984	06	82	Terry Kepner	Chinese Word Processing
FULL-DUPLEX	1984	06	84	Terry Kepner	Battery Questions
FULL-DUPLEX	1984	07	81	Terry Kepner	Calls for Reverse Video
FULL-DUPLEX	1984	07	81	Terry Kepner	Can It Answer the Phone?
FULL-DUPLEX	1984	07	81	Terry Kepner	GE Cassette Storage
FULL-DUPLEX	1984	07	81	Terry Kepner	Log-On Problems
FULL-DUPLEX	1984	07	81	Terry Kepner	Remote Control Woes
FULL-DUPLEX	1984	07	82	Terry Kepner	Epson RX-80
FULL-DUPLEX	1984	07	82	Terry Kepner	Problems Problems
FULL-DUPLEX	1984	07	82	Terry Kepner	Textwriter Problem
FULL-DUPLEX	1984	08	74	Terry Kepner	Blind Almost Sees
FULL-DUPLEX	1984	08	74	Terry Kepner	QSORT Out of Sorts
FULL-DUPLEX	1984	08	74	Terry Kepner	Reader Has Calc Fix
FULL-DUPLEX	1984	08	75	Terry Kepner	Convert or Reformat
FULL-DUPLEX	1984	08	75	Terry Kepner	Double Spacing Plea
FULL-DUPLEX	1984	08	76	Terry Kepner	Brother Connection
FULL-DUPLEX	1984	08	76	Terry Kepner	Cheaper to Buy New
FULL-DUPLEX	1984	08	77	Terry Kepner	Full-Screen Available
GRAPHICS	1983	12	26	Richard Ramella	Picasso in a Pint-sized Package
GRAPHICS	1984	01	40	Richard Ramella	Welcome to the Wonderful World of LCD Animation
HARDWARE	1983	09	38	Terry Kepner	Build Your Own Null Modem
HARDWARE	1983	10	26	C. Freiberg & Curt Feigel	Hitch Your 100 to Alternative Power Supplies
HARDWARE	1983	11	22	Don Watson	Tape Tips on Keeping Sane with Cassettes
HARDWARE	1983	12	34	Scott L. Norman	Ramp Up Your MEWS to 32K with Plug-In CMOS
HARDWARE	1984	01	20	Paul E. Andreasen	How to Interface with Small Recorders
HARDWARE	1984	03	32	T. Kepner & S. Spangenberg	The Apple-100 Connection is Easy with Right Hardware
HARDWARE	1984	05	32	John P. Mello Jr.	Tandy DVI: Trading Portability for Desktop Image
HARDWARE	1984	05	38	John P. Mello Jr.	Holmes Drive: Is Reliability and Right Price Enough?
HARDWARE	1984	06	48	Bill Templeton	Micro Recorders Shrink Mass Storage Medium for Model 100
HUMOR	1983	11	34	Margery Eliscu	Meltdown at the Supermarket
MAIL.100	1983	09	8	Bill Walters	Figures on Battery Life
MAIL.100	1983	09	8	Clay Schneider	Cases for Your Model 100 Anyone?
MAIL.100	1983	09	8	David Peyton	Cases for Your Model 100 Anyone?
MAIL.100	1983	09	8	David Springs	Wife Critical of 100
MAIL.100	1983	09	8	E. Brad Meyer	Figures on Battery Life
MAIL.100	1983	09	8	Gordon MacCarthy	Nicad Troubles Solved
MAIL.100	1983	09	8	Gordon Williams	Data Transfer in the Fast Lane
MAIL.100	1983	09	8	Guerri Stevens	Wife Critical of 100
MAIL.100	1983	09	8	Leonard Ericson	Complaint About Documentation
MAIL.100	1983	09	8	Les Simpson	The Model 100 Takes to the Air
MAIL.100	1983	09	8	Mike Suldo	Cases for Your Model 100 Anyone?
MAIL.100	1983	09	8	Reid Ashe	The Model 100 Takes to the Air
MAIL.100	1983	09	8	Sandy Trevor	The Model 100 Takes to the Air
MAIL.100	1983	09	8	Walt Kuleck	Cases for Your Model 100 Anyone?
MAIL.100	1983	09	8	Wayne	Mod 100 Gets a Lantern Battery
MAIL.100	1983	10	9	Ran Talbott	Cheap Trick for Checking Cables
MAIL.100	1983	10	9	C. Warren Andreasen	This Bug Erases Memory
MAIL.100	1983	10	9	David Hughes	A New Brand of Journalism
MAIL.100	1983	10	9	Keith Uddenberg	Converting 100 for European Use
MAIL.100	1983	10	9	Larry Holmes	Rechargeables and Wafer Drives
MAIL.100	1983	10	10	Paul Mifsud	CCR-81 Makes 20K of Text Reappear
MAIL.100	1983	10	10	Daniel Neidhart	Cassette Bug in Land of Maple Leaf
MAIL.100	1983	10	10	Guerri Stevens	Cassette bug in Land of Maple Leaf
MAIL.100	1983	10	10	Jim Stutsman	Solution to Calendar Problem?
MAIL.100	1983	11	8	Alexander Benenson	Nicads No Solution for this User
MAIL.100	1983	11	8	Carrie Arnold	Praise for Ramella but Not for His Listing
MAIL.100	1983	11	8	James R. Swarr	A Friendly Disagreement with Jake Commander
MAIL.100	1983	11	8	Lyndon B. Mitchell	Neither Bister nor Beeper nor Hacker nor Chipster
MAIL.100	1983	11	10	Don Corbitt	Trick to Adjust the Day of the Week
MAIL.100	1983	11	10	Doug Thompson	Modem Tariff Issue Heats Up on CompuServe
MAIL.100	1983	11	10	Remy David	Broadcaster Sees 100 as Wave of Future
MAIL.100	1983	12	9	Alidad Farmanfarma	Ramella's Program Good but Could Have Been Better
MAIL.100	1983	12	9	J. Kenneth Guscott	Clean Heads Key to Cassette Success
MAIL.100	1983	12	10	Phyllis A. Mayo	A Cautious but Happy Portable 100 Reader
MAIL.100	1983	12	10	Rubin L. Gorewitz	Enthralled but It Still Doesn't Do What It's Supposed To
MAIL.100	1983	12	11	David Dalton	Finds Articles Silly and Lacking Information
MAIL.100	1983	12	11	Hugh Tinlin	Epson FX Different Animal than Epson MX

# NEW HIGH SPEED TEXT FORMATTER WORDSTAR™ COMPATIBLE

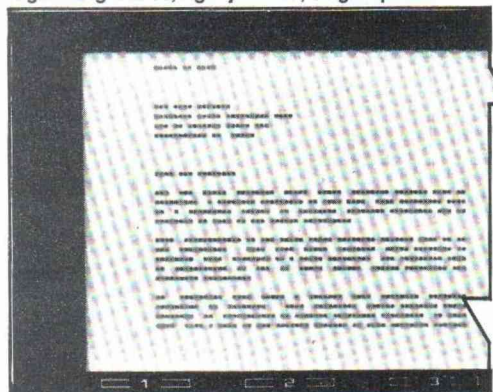
American Micro Products presents, **The Journalist**, a new text processing program that allows the user to view up to sixty-four lines of text directly on the Radio Shack Model 100 or

the NEC 8201 display. The Journalist is an extremely fast assembly language program that operates at about 4000 characters per second or one page per second.

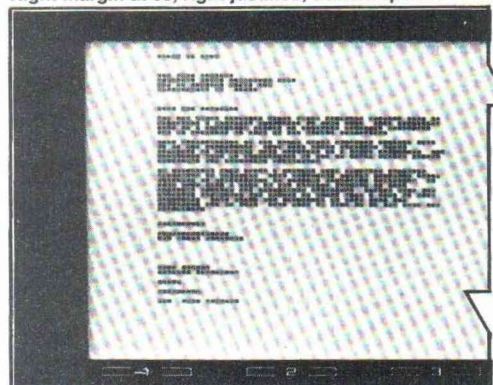
**Change the margins and watch the text instantly reformat itself on the screen!**



Right margin at 99, right justified, single spaced



Right margin at 65, right justified, double spaced



Right margin at 60, ragged right, single spaced

**The Journalist has an impressive list of features:**

- WORDSTAR compatible
- Pause between pages
- Left & right justification
- Footing capability
- Change margins
- Page numbers in heading or footing
- Forced and conditional paging
- Start at page, stop after page
- Auto page numbering
- Change page length, vertical margins
- Center Text
- Omit page number
- Embedded printer controls
- Set page number
- Multiple copies
- Embedded comments
- Variable line spacing
- Abandon printing
- Heading capability
- Plot Text
- Merge other files
- Boldface and underline

Call or write for information describing our other model 100 and 8201A programs: SPREADSHEET, SPREADSHEET TEMPLATES, INCOME PROPERTY ANALYSIS, PORTFOLIO ANALYSIS, CURVE FITTING, HISTOGRAM AND PLOT, EQUATION SOLVER, EQUATION SOLVER TEMPLATES, RPN CALCULATOR, FORTH, FILE MANAGER, and ASSEMBLER.

**YOU EXPECT THE BEST FROM  
AMERICAN MICRO PRODUCTS**



**AMERICAN MICRO PRODUCTS, INC.**

705 North Bowser Richardson, Texas 75081 (214) 238-1815

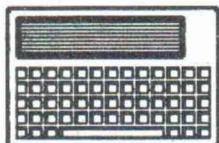
Category	Year	Mo.	Pg.	Author	Article Title
MAIL.100	1984	01	8	Fred W. Forrester	In Despair Over Bowling Problem
MAIL.100	1984	01	8	N. D. McCarthy	Alkaline Battery Solution Reincarnated
MAIL.100	1984	01	8	R.L. Lawrence	Alkaline Battery Solution Reincarnated
MAIL.100	1984	01	9	Jim McBurnett	Fewer Games and More Interfacing
MAIL.100	1984	01	10	Bill Walters	Tandy Explains Cassette Bug Error
MAIL.100	1984	01	10	Dennis Stickley	Just Learning — Without Company's Help
MAIL.100	1984	01	10	William B. Sanders	Storage A Problem? Try Disk Sharing
MAIL.100	1984	01	11	Evans M. Harrell	Slow and Sure but Wants Faster Way
MAIL.100	1984	01	11	Randy England	Sour Notes from the Sunshine State
MAIL.100	1984	02	9	R. Horowitz	Some Tips on Making Your Basic Faster
MAIL.100	1984	02	10	Dave Cloutier	Ricky Don't Poke that Number
MAIL.100	1984	02	10	Greg Susong	Ricky Don't Poke that Number
MAIL.100	1984	02	10	L. Rivers	Upset 100 User Warns — Buyer Beware
MAIL.100	1984	02	10	Martin Lowy	Ricky Don't Poke that Number
MAIL.100	1984	02	10	Terry Haas	100 vs NEC...No Contest
MAIL.100	1984	02	11	F.W. Harland	Has Own Version of Write+ After Tinkering
MAIL.100	1984	02	13	Dave Thomas	Portaprint's Control Code Formatter Harboring Bugs
MAIL.100	1984	02	13	Michael Stanford	A Word on Random Access and Cassettes
MAIL.100	1984	03	8	Bud Murdock	Reader Says GE Tape Recorder Is a Honey
MAIL.100	1984	03	8	Jay and Patricia Chapman	Sight Problems? Program Will Blow Your Specs Off
MAIL.100	1984	03	8	John C. Hudelson	Reader Lends Helpful Program for Text Printing
MAIL.100	1984	03	8	K.W. Klages	Bugs upon Bugs upon Bugs
MAIL.100	1984	03	8	Robert L. Briggo	Bugs upon Bugs upon Bugs
MAIL.100	1984	03	11	Ed Snyder	Wanted...Programs for Radio Shack Digitizer
MAIL.100	1984	03	11	Fred W. Forrester	D Batteries Offer Alternative Power Source
MAIL.100	1984	03	11	L. Shepherd	Sears Model 2164 Recorder and 100 and Winning Combo
MAIL.100	1984	03	12	A.W. Goldman	Confusing Positive Sines with Negatives is Bad Trig.
MAIL.100	1984	03	13	Brian Weiss	Better Late than Never Is Not Good Enough
MAIL.100	1984	03	13	Merrill S. Melnick	Keep It Nice and Simple Suggests Portable 100 Fan
MAIL.100	1984	04	8	Don Worrall	Enough Games — More How-To's
MAIL.100	1984	04	8	Lee Steffens	Games Are Fun — Keep'em Coming
MAIL.100	1984	04	8	Mark W. Earle	An Easier Way for File Sending Suggests Reader
MAIL.100	1984	04	8	R. Caley	A Complaint About Codekeeper
MAIL.100	1984	04	10	Herbert F. Spier	Tandy Service Good Says Nutmeg State Prof
MAIL.100	1984	04	10	Patricia Bramlett	Doctorate Student Sees with 100
MAIL.100	1984	04	11	Don Griffith	The Value of X Makes a Byte of Difference
MAIL.100	1984	04	11	Rodney Grant	Hit F8 Too Soon and You May be Overcharged
MAIL.100	1984	04	12	Mark Turnbull	Commander Should Talk Computers Not Politics
MAIL.100	1984	04	12	Robert E. Harold	Text Search Has Bug in It
MAIL.100	1984	04	12	Robert W. Judy	Andreasen's Article Confusing to Two Readers
MAIL.100	1984	04	13	Donald A. Gange	Blunt But My Sentiments Exactly
MAIL.100	1984	04	13	Peter Montross	Advertising Practice Disturbs New York Reader
MAIL.100	1984	04	13	Peter Samuel	NEC Has Nicer Keys, Radio Shack Take Notice
MAIL.100	1984	05	7	Bob Schwartz	RX-80 Additions
MAIL.100	1984	05	7	Ronn Lucas	Ventriloquist Cites Dummies
MAIL.100	1984	05	7	Stephen Lake	Ad Info Wanted Down Under
MAIL.100	1984	05	7	Will Waterman	Op-Amp for Micro CLOAD
MAIL.100	1984	05	8	Bob Sherman	To Keep the Honest Honest
MAIL.100	1984	05	8	Michael Stanford	Write+ Review Understated
MAIL.100	1984	05	8	Richard McLaughlin	Puzzled No More
MAIL.100	1984	05	11	John R. Grammer	100 Possible Rehab Took
MAIL.100	1984	05	13	Gary Bender	Tech Info Not Irrelevant
MAIL.100	1984	05	13	Oscar Firschein	Don't Fit In
MAIL.100	1984	06	6	Andrew F. Zarchy	Three Readers NEC Connect
MAIL.100	1984	06	8	William McNeil	AMPI Disagrees
MAIL.100	1984	06	9	Brad Baxter	No Free Lunch
MAIL.100	1984	06	9	J. Bixby	Commander Still Jarring
MAIL.100	1984	06	9	John Shafer	No Respect
MAIL.100	1984	06	9	W.B. Brown Jr	Commander Still Jarring
MAIL.100	1984	07	6	A Model 100 Fanatic	Ives or Traveling Prof?
MAIL.100	1984	07	8	Bernard W. Bopp	Sticky Security Situation
MAIL.100	1984	07	8	John A. Cook	Happy with Us Not Tandy
MAIL.100	1984	07	9	Bob Cramerkl	Housekeeping Hints
MAIL.100	1984	07	9	Charles J. Cressman	P Form Update
MAIL.100	1984	07	9	Sheldon L. Richman	Osborne-100 Typos
MAIL.100	1984	07	9	Thomas D. Scott II	Hot in Alaska
MAIL.100	1984	08	6	Charles M. King III	Not Up to Speed
MAIL.100	1984	08	6	Ed Juge/Radio Shack	Second Generation No Threat

Category	Year	Mo.	Pg.	Author	Article Title
MAIL.100	1984	08	6	Greg Bouffard	Two Thankful Readers
MAIL.100	1984	08	8	Fred W. Forrester	Reader Offers Products Help
MAIL.100	1984	08	9	Bruce Drake	Far East Entourage
MUSIC	1983	11	25	Joel and Debra Dinda	Transform Your Portable into a Musical Instrument
NEW PRODUCTS	1983	09	59	No Author	Hot Sheet Reveals Inner Workings of 100
NEW PRODUCTS	1983	09	59	No Author	Print Sort
NEW PRODUCTS	1983	09	60	No Author	Bar-Code Reader
NEW PRODUCTS	1983	09	60	No Author	PortaCalc; PortaStat; PortaFin; PortaMax; PortaMed
NEW PRODUCTS	1983	09	62	No Author	Dot-Matrix Printer "Banana"
NEW PRODUCTS	1983	09	62	No Author	Businesspak+
NEW PRODUCTS	1983	09	62	No Author	1984 Computer Desk Diary
NEW PRODUCTS	1983	10	62	No Author	Bar Code Reader
NEW PRODUCTS	1983	10	62	No Author	Learn to Type
NEW PRODUCTS	1983	10	62	No Author	M-Strap
NEW PRODUCTS	1983	10	62	No Author	Power Surge Protection
NEW PRODUCTS	1983	11	60	No Author	Traveling Accountant
NEW PRODUCTS	1983	11	60	No Author	Traveling Appointment Manager
NEW PRODUCTS	1983	11	60	No Author	Traveling Communicator
NEW PRODUCTS	1983	11	60	No Author	Traveling Project Manager
NEW PRODUCTS	1983	11	60	No Author	Traveling Tax Manager
NEW PRODUCTS	1983	11	60	No Author	Traveling Time Manager
NEW PRODUCTS	1983	11	61	No Author	8K RAM Upgrade
NEW PRODUCTS	1983	11	61	No Author	Data+; Type+; Tutor+; Sort2+
NEW PRODUCTS	1983	11	61	No Author	Financial Analysis
NEW PRODUCTS	1983	11	61	No Author	Games 1 and Games 2
NEW PRODUCTS	1983	11	61	No Author	Mikrokolor Color Graphics Interface
NEW PRODUCTS	1983	11	61	No Author	Tenky+; Wand+; Logon+; Write+ 2.0
NEW PRODUCTS	1983	11	61	No Author	Traveling Expense Manager
NEW PRODUCTS	1983	11	61	No Author	Traveling Sales Manager
NEW PRODUCTS	1983	12	62	No Author	ASMBLR.BA
NEW PRODUCTS	1983	12	62	No Author	P-Legs
NEW PRODUCTS	1983	12	62	No Author	MD-100 Wafer Drive
NEW PRODUCTS	1983	12	62	No Author	PoCo Stand

## EXTEND YOUR MODEL 100 with TELECOMMUTER™

Here's a fully integrated word processing and communications software product for your Tandy 2000 or other popular desktop computer. Look at these features:

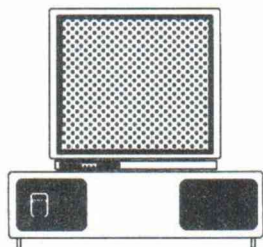
**TELECOMMUTER** gives you all the Model 100 **TEXT** Editor commands — plus lots of extensions to take full advantage of the larger display and greater horsepower of a desktop computer.



**TELECOMMUTER** has fully prompted fast file transfer to move text between the Model 100 and your desktop computer at 9600 baud, over a null modem cable (included).

You can use your Model 100 to control your big computer over standard telephone lines. Exchange files, execute DOS commands and run stand-alone programs from your Model 100 or other remote computer.

**TELECOMMUTER** also provides all the Model 100 **TELCOM** Communications commands — including auto-dial and auto-logon. **PLUS:** Optional setup of all communications parameters in each **ADRS.DO** record. Use the **TEXT** Editor while on-line in Terminal Mode.



Runs on the Tandy 2000  
NO CASSETTES!

**SIGEA SYSTEMS, INC.**

19 Pelham Road  
Weston, MA 02193  
(617) 647-1098



**Software by Sigea**

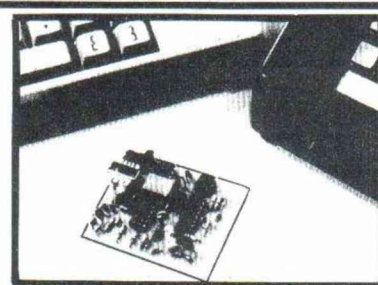
\$200 plus shipping.  
Mail and Phone orders, MasterCard and Visa accepted.

## IT'S HERE! Finally, an internal modem for your NEC-8201A

TouchBase Design is proud to announce production of the TouchBase Modem—the **only internal, direct connect** modem designed for installation inside the NEC-8201A portable computer, and other portable machines such as the Epson HX-20.

When using the TouchBase Modem, the phone line loops **directly** into the computer via an RJ 11 jack; dial the number, and you are on line! No extra batteries—the TouchBase Modem is powered by the computer, and virtually turns off (25 *micro* amps) when you disconnect the phone line. This unique design also allows the RS 232 port to be used with **any other** peripheral when the TouchBase Modem is not used.

Installation is easy: by using the supplied instructions and a small screwdriver, anyone can install the TouchBase Modem in about 10 minutes. Because of the friendly design, there is absolutely **no** soldering necessary.



The TouchBase Modem is **the** way to hit the road.

**\$129** List

- 30 day full price warranty
- Proven operation

For dealer pricing information, please contact:

**TouchBase Design**  
1447 South Crest Drive  
Los Angeles, CA 90035  
(213) 277-1208

Category	Year	Mo.	Pg.	Author	Article Title
NEW PRODUCTS	1983	12	63	No Author	Chip-Tote
NEW PRODUCTS	1984	01	62	No Author	Annotated Bibliography of Computer
NEW PRODUCTS	1984	01	62	No Author	Computer Publishers Publications
NEW PRODUCTS	1984	01	62	No Author	CompuServe To Offer Direct Marketing
NEW PRODUCTS	1984	01	62	No Author	Newsline Communicator
NEW PRODUCTS	1984	01	62	No Author	The Source
NEW PRODUCTS	1984	01	63	No Author	ComRiter CR-II Daisy Wheel
NEW PRODUCTS	1984	01	63	No Author	The Computer Dictionary
NEW PRODUCTS	1984	02	68	No Author	Code Keeper
NEW PRODUCTS	1984	02	68	No Author	Defense Industry Report
NEW PRODUCTS	1984	02	68	No Author	Smart Cable Solves I/O Serial Connection Hassles
NEW PRODUCTS	1984	02	70	No Author	Microcomputer Software Directory
NEW PRODUCTS	1984	02	70	No Author	Staticide Wipes
NEW PRODUCTS	1984	02	70	No Author	Trav-L-Case
NEW PRODUCTS	1984	02	71	No Author	Computer Media Directory
NEW PRODUCTS	1984	02	71	No Author	Ultrasonic III Typewriter
NEW PRODUCTS	1984	03	67	No Author	CP/M 2.2 Companion
NEW PRODUCTS	1984	03	67	No Author	Pigskin Carrying Cases
NEW PRODUCTS	1984	03	67	No Author	Prairie Power
NEW PRODUCTS	1984	03	68	No Author	Elf-Writer; Elf+1; Elf-Cop; Elf-Banker
NEW PRODUCTS	1984	03	68	No Author	External Expansion RAM
NEW PRODUCTS	1984	03	68	No Author	PL-100 System
NEW PRODUCTS	1984	03	68	No Author	T Plan/N Plan; Portfolio Analysis; Income Property Analysis
NEW PRODUCTS	1984	03	68	No Author	The Radio Shack Notebook Computer
NEW PRODUCTS	1984	03	69	No Author	LAPCOM
NEW PRODUCTS	1984	04	59	No Author	Disk-Video Interface
NEW PRODUCTS	1984	04	59	No Author	Pro Aid
NEW PRODUCTS	1984	04	59	No Author	Scribe 3.0
NEW PRODUCTS	1984	04	59	No Author	The Tax Manager
NEW PRODUCTS	1984	04	60	No Author	Microindex
NEW PRODUCTS	1984	04	60	No Author	The Executive Information Service
NEW PRODUCTS	1984	04	61	No Author	COMPMail+
NEW PRODUCTS	1984	04	61	No Author	Electronic Quotebook

*the Black Jack™*

#### A NEW PORTABLE MODULAR JACK FOR MODEMS



Have you ever been dealt out of telecommunications in hotels, offices and other places on the road? Why gamble on finding a telephone jack that will accept your modem. Deal yourself a winning hand with **the Black Jack**.

Simply unscrew the mouthpiece together with the microphone and carefully set them to one side. Attach **the Black Jack** on the handset, insert your RJ11C direct connect line cord from your modem and you're ready for action. You may now dial direct from your computer if your modem has Touch Tone® dialing.

If not, simply dial from the telephone itself. When your telecommunications are complete, snap off **the Black Jack** and replace the mouthpiece.

Price: \$49.95.

For enduser orders contact: 1-800-227-3800 Ext. 245.

For dealer inquiries and

OEM information contact:

**the microperipheral corporation**

2565 - 152nd Avenue NE, Redmond, WA 98052

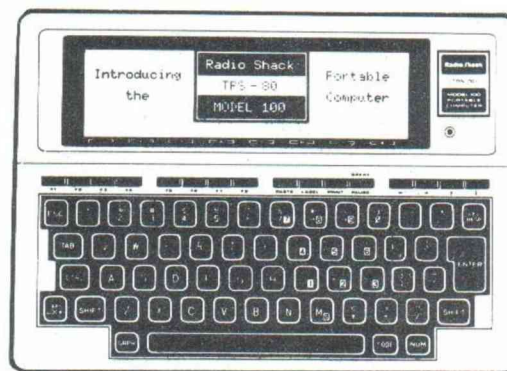
(206) 881-7544

\*the Black Jack is a trademark of The Microperipheral Corporation.

# TRS-80™

SAVE SALES TAX\* PLUS DISCOUNT

\*TEXAS RESIDENTS ADD ONLY 4%



**MODEL 100 32K**

## FORT WORTH COMPUTERS

**WE ARE SERIOUS ABOUT SAVING YOU MONEY**

(Located 30 miles from Fort Worth)

377 Plaza • GRANBURY • NR FORT WORTH, TEXAS 76048

**TOLL FREE: 1-800-433-S-A-V-E**

Monday thru Friday — 9:00 a.m. to 5:00 p.m.

(Order inquiries/Customer Service &) IN TEXAS: 817-573-4111

Category	Year	Mo.	Pg.	Author	Article Title
NEW PRODUCTS	1984	04	61	No Author	The New Tech Times
NEW PRODUCTS	1984	05	67	No Author	Disk Drive for Model 100
NEW PRODUCTS	1984	05	67	No Author	ROM Chip
NEW PRODUCTS	1984	05	68	No Author	ThinPrint 80
NEW PRODUCTS	1984	05	68	No Author	Traveling Writer
NEW PRODUCTS	1984	05	69	No Author	Laplog
NEW PRODUCTS	1984	05	70	No Author	"Briefcase Boxes" for Paper
NEW PRODUCTS	1984	05	70	No Author	Magic Computer Input-Output Mug
NEW PRODUCTS	1984	05	70	No Author	Portable Secretary
NEW PRODUCTS	1984	05	71	No Author	American Tourister Case for Model 100
NEW PRODUCTS	1984	05	71	No Author	Commlock
NEW PRODUCTS	1984	05	71	No Author	Package of 13 Programs for \$24.95
NEW PRODUCTS	1984	06	76	No Author	MDT Communicator
NEW PRODUCTS	1984	06	76	No Author	Model 100 A/D
NEW PRODUCTS	1984	06	76	No Author	Portable RAM-Disk
NEW PRODUCTS	1984	06	76	No Author	Workstation-100
NEW PRODUCTS	1984	06	78	No Author	1-to-1 Remote Control Software
NEW PRODUCTS	1984	06	78	No Author	Info-Mate
NEW PRODUCTS	1984	06	78	No Author	Lone Writer
NEW PRODUCTS	1984	06	78	No Author	Power Prop
NEW PRODUCTS	1984	06	79	No Author	Black Box Catalog
NEW PRODUCTS	1984	06	79	No Author	Casino Games; Fun'n Games I; II; Board & Graphic Games
NEW PRODUCTS	1984	07	30	No Author	64K Upgrade Box
NEW PRODUCTS	1984	07	30	No Author	AOPA Forum
NEW PRODUCTS	1984	07	30	No Author	Computer Check Carrier
NEW PRODUCTS	1984	07	30	No Author	Lee's Guide to Published Computer Programs
NEW PRODUCTS	1984	07	30	No Author	Trip (Expense Account Recorder)
NEW PRODUCTS	1984	07	33	No Author	FullVu 100
NEW PRODUCTS	1984	07	33	No Author	Oak Carrying Case
NEW PRODUCTS	1984	07	33	No Author	Power Directors
NEW PRODUCTS	1984	08	36	No Author	Weather Forecaster
NEW PRODUCTS	1984	08	36	No Author	Black Jack
NEW PRODUCTS	1984	08	36	No Author	Bullet

**There's always  
Smooth Sailing  
with the -**

## WEATHER FORECASTER

For the boater, sailor, aviator, traveler, fisherman, hunter and anyone who plans a trip or an event, our software cassette accurately predicts and projects up-to-date weather information. With the touch of your finger, instantly you'll know storm weather, moving and stationary fronts.

**ONLY \$19.95.** A WEATHER FORECASTER for the personal computer Model 100 and an easy to read instruction booklet.

Please add \$2.00 for shipping and handling charges. Michigan residents add 4% sales tax.

**\$19.95** Per Cassette

**CAPS  
MARKETING** 2555 Lake Drive, S.E.  
East Grand Rapids, MI 49506

## PORTABILITY



**\$59.95**

(Add \$2.50  
shipping & handling  
per case in the  
continental U.S.)

## MADE COMPLETE

The **Chip-Tote™ PCD-1** makes your TRS-80 Model 100 or comparably sized briefcase portable truly complete. It's the first light-weight soft case that doubles as a desk.

The **Chip-Tote™ PCD-1** is constructed of rugged Cordura® nylon and our special closed cell foam, so you can be sure your computer and its accessories will get the maximum in protection. So next time don't leave the office behind - carry it with you!

YES, send me: \_\_\_\_\_ PCD-1(s) in \_\_\_\_\_ Black \_\_\_\_\_ Smoke Grey  
Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Signature \_\_\_\_\_

☐ CHECK/MO (CA res. add 6% tax) ☐ C.O.D. (Add \$1.65)

☐ M/C ☐ VISA \_\_\_\_\_ Exp. \_\_\_\_\_



**KANGAROO VIDEO PRODUCTS, INC.**  
10845 Wheatlands Ave., Suite "C" • Santee, CA 92071-2856 • (619) 562-9696  
**ENGINEERED CASES FOR SENSITIVE ELECTRONIC EQUIPMENT**

Category	Year	Mo.	Pg.	Author	Article Title
NEW PRODUCTS	1984	08	36	No Author	Go-Anywhere Full-Function Printer and Buffer
NEW PRODUCTS	1984	08	36	No Author	Preassembled Bullet-Proof Cables
NEW PRODUCTS	1984	08	36	No Author	CALC
PORT. COMMANDER	1983	09	18	Jake Commander	Jake Is Seduced by Tandy's New Portable
PORT. COMMANDER	1983	10	18	Jake Commander	Jake Builds Another ROM cathedral to the Art of Reverse Engineering
PORT. COMMANDER	1983	11	20	Jake Commander	Jake Offers Some New Commands to Counter the Perils of Portability
PORT. COMMANDER	1983	12	24	Jake Commander	As Model 100 Converts Increase, Every Day CompuChurch Gets Nearer
PORT. COMMANDER	1984	01	24	Jake Commander	Will the Information Revolution Leave Our Nasty Neighbors Behind?
PORT. COMMANDER	1984	02	26	Jake Commander	Lock Up Those 8085 Mnemonic Writers and Throw Away the Key
PORT. COMMANDER	1984	03	26	Jake Commander	The Secret Lives of Microsilica, or Excuse Me, Sir, While I Interrupt
PORT. COMMANDER	1984	04	24	Jake Commander	How the 80C85 Microprocessor Handles Its Interrupts
PORT. COMMANDER	1984	05	20	Jake Commander	Interrupt Routine Faster than Bullet, More Complex than Mosaic
PORT. COMMANDER	1984	06	16	Jake Commander	A Look at How the 100's MPU Evolved Is a Study in Micro-Genetics
PORT. COMMANDER	1984	07	14	Jake Commander	The Difference Between Basic Interpreters, Compilers, Translators
PORT. COMMANDER	1984	08	16	Jake Commander	There are Alternatives to Burning Midnight Oil When Creativity Strikes
PREVIEW	1983	09	4	John P. Mello Jr.	A Look at this Issue and A Eulogy of Sorts to the Stuff of Promise
PREVIEW	1983	10	4	John P. Mello Jr.	From Corrupting Power to Portable Power to Keyboard Power
PREVIEW	1983	11	4	John P. Mello Jr.	Can Hank Williams Deprogram the Damage of TI and Bill Cosby?
PREVIEW	1983	12	4	John P. Mello	Birth of a New Firm, Disassembly of a ROM, and a Rap of Shakeout
PREVIEW	1984	01	4	John P. Mello Jr.	It's Goodbye for the Grand Experiment
PREVIEW	1984	02	4	John P. Mello Jr.	We're Bigger but We Don't Have Enough Space Yet!
PREVIEW	1984	03	4	John P. Mello Jr.	On Apple-100 Communication and a Word About MEWS
PREVIEW	1984	04	4	John P. Mello Jr.	Briefcase Portable and Mike Greenly of The Source
PREVIEW	1984	05	4	John P. Mello Jr.	An Answer to the Query: When Will You Cover NEC and Other Topics?
PREVIEW	1984	06	5	John P. Mello Jr.	Model 100 Special Interest Group
PREVIEW	1984	07	5	John P. Mello Jr.	Everyone Wants to Know About the Life Expectancy of the 100
PREVIEW	1984	08	5	John P. Mello Jr.	The Perils of Portability Roost on an Owner
PROGRAMMING	1983	11	17	David Busch	Making Some Other Micros Speak Mews
PROGRAMMING	1984	01	47	J. Gary Bender	Bender's Better Way to Better Basic — Part 1
PROGRAMMING	1984	03	56	J. Gary Bender	Bender's Better Way to Better Basic — Part 2
PROGRAMMING	1984	04	38	J. Gary Bender	Bender's Better Way to Better Basic — Part 3
PROGRAMMING	1984	05	45	J. Gary Bender	Bender's Better Way to Better Basic — Part 4
REVIEWS	1983	09	56	Carl Cramer	The 5th Generation

## RESEARCH REPORT

# MICROCOMPUTER OPERATING SYSTEM STRATEGIES

- Explores impact on micro hardware and software business of trends in operating systems, including Unix, MS/DOS, CP/M.
- Discusses user perceptions of operating system elements including data management, and the interface between applications software, programming tools and DBMS.
- Details past and future impact of Xerox Dynabook and Smalltalk developments on products such as Apple's Lisa, Quarterdeck's DESQ, Visicorp's VisiOn, etc.
- Establishes the product-planning parameters for future micro product offerings, and reviews probable adherence to these parameters by AT&T's future 32-bit micro, IBM's rumored "4301" and other upcoming products of significance.
- 237 pages; 42 exhibits; published September 1983; price \$1,650.00.

For free descriptive literature and a detailed table of contents, contact:

## INTERNATIONAL RESOURCE DEVELOPMENT INC.

30 High Street  
Norwalk, CT 06851 U.S.A.  
Call TOLL-FREE  
800-243-5008  
(203) 866-6914  
WU Telex 64 3452



*the great oak company™*

introduces

## THE FIRST PRINT FORMATTER

*made especially for writers  
who hate asking for help!*

**LONE WRITER™**

**\$35.00**

With **LONE WRITER**, you can produce virtually any document — from business letters to slick ad layouts... effortlessly. Just insert a few simple, common sense commands for formatting and fonts into your text, and presto! Everything you write looks terrific!

### ELEGANT FORMATTING FEATURES

- Line and Text Centering
- Left and Right Justification
- Vertical Spacing
- Hanging Bullets and Hyphens
- Page-wide Lines (broken and solid)
- Headers, Footers, Page Breaks and five styles of Page Numbering
- Pre-formatting option for fast printing

Available for the  
**TRS-80 Model 100**  
and **NEC 8201.**

**BUILT-IN INGENUITY** — In many cases, you may not need commands at all — **LONE WRITER's** default settings do the job.

**UP TO 128 WAYS TO EXPRESS YOURSELF** — 16 different fonts, adjustable to almost any printer; from **EXTRA-LARGE EMPHASIZED** to condensed, plus underlining, italics, subscript, superscript, and double-strike capabilities.

### A STEP-BY-STEP USER GUIDE

*Clear explanations  
that make  
commands  
easy to remember,  
plus handy tips  
and examples for  
solving common  
(and uncommon)  
formatting  
problems.*

*the great oak company™*

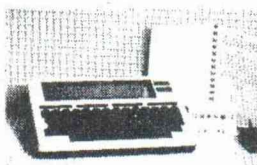
Enclose check or money order for \$35.00  
Send to: 9 Great Oak Road, Huntington, CT 06484

Category	Year	Mo.	Pg.	Author	Article Title
REVIEWS	1983	09	54	John P. Mello Jr.	Businesspak+ Write+
REVIEWS	1983	10	17	Carl Cramer	PortaCalc
REVIEWS	1983	10	58	Charley Freiberg	Autoplot 3.0
REVIEWS	1983	10	60	Terry Dettman	Model 100 Acoustic Coupler
REVIEWS	1983	11	54	Kerry Leichtman	Put+
REVIEWS	1983	11	56	Woody Liswood	PortaPrint
REVIEWS	1983	11	59	Woody Liswood	Portadex
REVIEWS	1984	01	35	Danny Goodman	NEC vs the Model 100: Battle Royal in the Notebook Market
REVIEWS	1984	01	58	Woody Liswood	Telex+
REVIEWS	1984	01	59	Arlen P. Walker	Model 100 Games I
REVIEWS	1984	01	61	John P. Mello Jr.	The Gorilla Banana
REVIEWS	1984	02	62	Scott L. Norman	PortaStat and PortaMax
REVIEWS	1984	03	70	Dan Shafer	Comparison of Print, Write+, and Tortugawriter
REVIEWS	1984	04	62	John P. Mello Jr.	Traveling Time Manager
REVIEWS	1984	04	65	Woody Liswood	Data+
REVIEWS	1984	04	68	Scott L. Norman	TPLAN/NPLAN
REVIEWS	1984	04	72	Woody Liswood	Sort2+
REVIEWS	1984	05	54	David Dunn Thomas	Mind Master and Sky Raider
REVIEWS	1984	05	57	Mary Jeann Batham	PortaTax
REVIEWS	1984	05	59	Mary Jeann Batham	The Traveling Appointment Manager
REVIEWS	1984	05	63	Mary Jeann Batham	Book
REVIEWS	1984	06	40	John P. Mello Jr.	The Italian Invasion
REVIEWS	1984	06	61	Glen C. Birbeck	Echo GP Speech Synthesizer
REVIEWS	1984	06	62	Stuart Hawkinson	Calculator
REVIEWS	1984	06	64	Stuart Hawkinson	P Form: Page Formatter for Text and Basic
REVIEWS	1984	06	69	Mary Jeann Batham	Executive Calendar 1.0
REVIEWS	1984	06	71	Robert K. Kawaratani	Tenky+
REVIEWS	1984	06	72	Robert L. Green	Prairie Power
REVIEWS	1984	06	74	Charley Freiberg	Financial Analysis Packages
REVIEWS	1984	08	56	Carl Oppedahl	Pro Aid
REVIEWS	1984	08	65	John D. Perry Ph.D.	Portable Lab 100
REVIEWS	1984	08	65	John D. Perry Ph.D.	Model 100 A/D Converter
REVIEWS	1984	08	70	Debra M. Marshall	Bar Code Reader

# Model 100 / NEC 8201A JOYSTICK

Add the feature the manufacturer left out! Now available in two models, a plug in ready version and a complete kit version which requires user installation. Both models are shipped completely assembled and include the joystick adapter harness, a precision miniature joystick to maintain portability, full documentation with drawings and photos, FREE software and audible instructions on cassette tape. Instructions on converting existing software to joystick use is also included.

**PLUG-IN VERSION** \$84<sup>95</sup> **KIT VERSION** \$44<sup>95</sup>  
(limited availability)



**SHIPPING & HANDLING  
PREPAID ORDERS**  
SEND CHECK OR  
MONEY ORDER \$1.50  
**COD ORDERS**  
FOR FASTEST  
SERVICE \$3.50



**SUSIE  
SOFTWARE**

**24 HR C.O.D. PHONE**  
**(312) 577-5154**

874 East Northwest Hwy. Mt. Prospect, IL 60056

## SOFTWARE

**KEYBOARD AND JOYSTICK COMPATIBLE**  
Model 100 / NEC 8201A

**MICRO-FLITE II** \$29.95  
*A flight simulator game. Multiple airports and difficulty levels.*

**MICRO-FILES II** \$29.95  
*A powerful data management program with searches, sorts, alphabetizing.*

**MICRO-LABELS II** \$29.95  
*A versatile list and label program with searches, sorts, alphabetizing.*

**MICRO-SALES II** \$29.95  
*Generates receipts, invoices, sales orders and purchase orders.*

**MICRO-MATH II** \$19.95  
*A calculator with 7 programmable memories and a fractional math program.*

**MICRO-BYTES** \$49.95  
*A data management program with mailing label capabilities.*

Category	Year	Mo.	Pg.	Author	Article Title
REVIEWS	1984	08	71	Terry Kepner	Disk+
SOCIETY	1983	09	34	John P. Mello Jr.	A Legend Before Its Time
SOCIETY	1983	12	60	David Hughes	The 100 Becomes a Silent Board Member
SOCIETY	1984	01	27	John P. Mello Jr.	As the Dust Subsides, 1983 Appears to be a MEWS Year
SOFTWARE	1983	09	24	Jake Commander	ROM Addresses: Getting BASIC to Do What You Want
SOFTWARE	1983	10	40	Thomas E. Graves	The Model 100 and the MX-80: A Powerful Duo
SOFTWARE	1983	10	55	Jake Commander	ROM Keyboard Tricks for Living Life Beyond INKEY\$
SOFTWARE	1983	12	40	Jake Commander	Disassembling the Puzzle in Your 100's ROM
SOFTWARE	1984	02	45	Ronald F. Balonis	As Soon as a Micro Runs It Learns to Sort
SOFTWARE	1984	03	36	Jesse Bob Overholt	Tap into the Free Data Base Within Your ROM
SOFTWARE	1984	06	54	Jeffrey W. Levin	LDOS Gives Model 100 Mass Storage
SOFTWARE	1984	07	34	Jesse Bob Overholt	Funkey Stuff—1: Learn How to Program Your 100's F-Keys
SOFTWARE	1984	08	28	Jesse Bob Overholt	Funkey Stuff—2: Calculating File Size and More
TANDYTALK	1983	09	20	Bill Walters	Countless Trips and E-Letters Later Tandy Births the 100
TANDYTALK	1983	10	20	Bill Walters	Tandy Reorg Cleaves Computer Merchandising into Three New Parts
TANDYTALK	1983	11	14	Bill Walters	Of Meetings and Flights, Poundings and June Bugs
TANDYTALK	1983	12	22	Bill Walters	Nix Bothersome Carriage Returns and Talk to Your Mod 4
TANDYTALK	1984	01	16	Bill Walters	Delving into the Darkest Reaches of the Model 100's Memory
TANDYTALK	1984	02	22	Bill Walters	A Warning About Reset and a Four-Star CSAVE Tip
TANDYTALK	1984	03	20	Bill Walters	Some Lessons to be Learned from Kid Tamer and Fun-Key Stuff
TANDYTALK	1984	04	30	Bill Walters	Tandy Ready to Pull Wraps Off Ultimate Computer
TANDYTALK	1984	05	30	Bill Walters	What Will the Future Lap-Sized Portable Be Like?
TANDYTALK	1984	06	28	Bill Walters	Create a Data Base with Radio Shack's Disk-Video Interface
TANDYTALK	1984	07	25	Bill Walters	DVI Data Base — Part 2: Storing More Than Your Data Base on Your Disk
TELECOMPUTING	1983	09	22	Bill Loudon	Increase your 100's Storage with 128K from CompuServe
TELECOMPUTING	1983	10	24	Bill Loudon	Winging Across America Made Easier with CIS Electronic Airline Guide
TELECOMPUTING	1983	11	46	Bill Loudon	Turn Your Model 100 into an Automatic Mailman with this CIS Offering
TELECOMPUTING	1983	12	20	Bill Loudon	Beat the Christmas Crowds by Letting Your Micro Do Your Shopping
TELECOMPUTING	1984	01	24	Bill Loudon	Big Brother Isn't Watching Anyone — Yet
TELECOMPUTING	1984	02	24	Bill Loudon	How to Access Data Bases for CompuServe's Special Interest Groups
TELECOMPUTING	1984	03	24	Bill Loudon	New Electronic Mail Service Started by MCI Communications
TELECOMPUTING	1984	04	20	Bill Loudon	Get Information Edge with Investment Quotation Data Bases
TELECOMPUTING	1984	05	26	Bill Loudon	Get On Line and Be On Top with Altertext

## FILL THE GAP!

Complete your collection of **PORTABLE 100** Magazine.

Order the back issues listed for only \$6.00 per copy (includes First Class postage and handling) — continental U.S. only.

We must have payment with your order. Orders will be processed on the day they are received.

Indicate copies below:

_____ Sep 83	_____ Oct 83	
_____ Nov 83	_____ Dec 83	
_____ Jan 84	_____ Feb 84	
_____ Mar 84	_____ Apr 84	NOT AVAILABLE
_____ May 84	_____ Jun 84	
_____ Jul 84	_____ Aug 84	
_____ Sep 84	_____ Oct 84	

TOTAL COPIES ORDERED \_\_\_\_\_, @ \$6.00  
per copy = \$ \_\_\_\_\_ enclosed

☐ Charge to my  
☐ VISA  
☐ MasterCard

☐ Check  
enclosed

Card # \_\_\_\_\_ Exp. \_\_\_\_\_

Signature \_\_\_\_\_

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

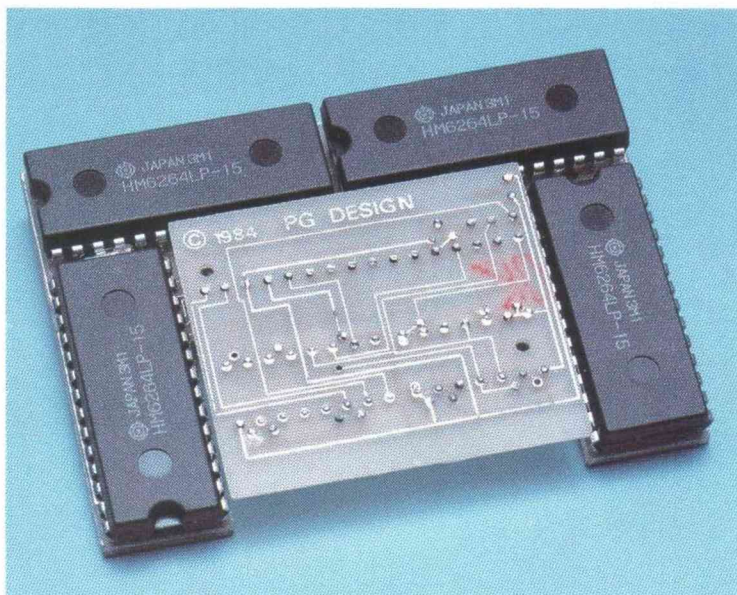
Category	Year	Mo.	Pg.	Author	Article Title
TELECOMPUTING	1984	06	25	Bill Louden	Hear Your Interest Singing in the Pulses of the Network Nation
TELECOMPUTING	1984	07	22	Bill Louden	NewsNet Costs More than Other Services, but Worthwhile
TELECOMPUTING	1984	08	21	Bill Louden	Getting Tandy's Mighty Mite to Talk to Its MS-DOS Flagship
TEXTWARE	1983	09	26	Richard Ramella	Format Your Words with this Text Aid
TEXTWARE	1984	07	56	Richard Ramella	You Can Publish Newsletters with Your Model 100 and Printer
THE WIRE	1983	09	14	Scott L. Kaesar	Micro Visionary at Forum Gazes at Life Beyond Blinking Cursor
THE WIRE	1983	09	16	Chris Brown	Multitudes Gather at NCC Show, Ogle New Gavilan, Sharp Micros
THE WIRE	1983	10	14	John P. Mello Jr.	Shirley's Departure Boon for Microsoft
THE WIRE	1983	10	16	John P. Mello Jr.	Trade Mag Reports 100 Darling of Reporters
THE WIRE	1983	11	11	Tom Jurgens	First Timers Getting 100s at College Tandyland
THE WIRE	1983	11	12	No Author	Osborne Furloughs: Strikeout or Shakeout?
THE WIRE	1983	11	13	No Author	Home Micro Market Means Computer in Every Closet
THE WIRE	1983	12	12	John P. Mello Jr.	Micro Market Shook Up But Not Shook Out
THE WIRE	1984	01	13	John P. Mello Jr.	Test Results Show 100 Meets Emissions Benchmarks
THE WIRE	1984	02	14	No Author	Tandy's New 2K: The Key Word Is Leverage
THE WIRE	1984	02	17	Nancy L. Laite	View of Show of Shows Better from Sidelines
THE WIRE	1984	03	14	Nancy L. Laite	First Electronic Debate on Nuclear Arms Issue
THE WIRE	1984	03	17	John P. Mello Jr.	One Win, One Loss for the Model 100
THE WIRE	1984	03	18	No Author	Clone May Offer Solution to Paradox of IBM Dominance
THE WIRE	1984	03	18	No Author	Model 100 Picked as 1983 Standout—Again
THE WIRE	1984	04	14	Jim Lamb	Mews Draws Raves from Demanding Key punchers
THE WIRE	1984	04	16	Mike Greenly	Flash Pizazz Evident at Vegas Electronics Bash
THE WIRE	1984	05	14	Cheryl Peterson	Airlines Still in Dark About Micros in Flight
THE WIRE	1984	05	16	Mike Greenly	Largest Software Show to Date Lacks Sizzle
THE WIRE	1984	06	11	Mike Greenly	Experts Predict 100 Outmoded by this Fall
THE WIRE	1984	07	10	John P. Mello Jr.	OEM Channels Offer Alternative for Japan
THE WIRE	1984	07	10	John P. Mello Jr.	Will HP 110 be Elixir for Ailing Tote Market?
THE WIRE	1984	07	12	Odd De Presno	Norwegian Televerket to Market CCITT Mews
THE WIRE	1984	08	10	Mike Greenly & John Mello	Deep-South Becomes Watershed for Lappers
TRAVEL	1983	10	35	Paul Robbins	Will The 100 And Lodging Industry Mix?
TRAVEL	1984	02	28	J. Erickson & R.J. Sayre	Master Your Dates and Expenses with Travel Master
TRAVEL	1984	07	42	Steven K. Roberts	A 100's Odyssey on a Recumbent
TRAVEL	1984	07	63	Odd De Presno	And Nary a Beep Was Transmitted from the People's Republic

## Advertisers Index

PG	RS	Advertiser	PG	RS	Advertiser	PG	RS	Advertiser
52	58	A & J	67	64	Fort Worth	20	15	P.C.S.G.
5	50	Alpine Data Systems	69	68	Great Oak	58	53	P.C.S.G.
56	50	Alpine Data Systems	55	25	Hedelund	32	7	ProSoft Enterprises
33	32	American Micro Products	27	30	Humphrey Industries	CII	1	Purple Computing
48	46	American Micro Products	69	67	IRD	11	11	Purple Computing
64	52	American Micro Products	68	66	Kangaroo	4	51	Quasatronics
19	56	ARMS	34	22	Kensington Micro	14	14	Radio Shack
42	36	Avion	50	6	Key Solutions	36	23	Radio Shack
40	34	Axonix	43	38	KJM Development	52	57	Secure Systems
7	9	Bluestem	55	27	Loquor	66	61	SIEGA
62	19	Buddy Systems	55	26	MAK	60	54	Skyline Marketing
55	24	Canada	45	40	Menlo Systems	26	29	Southworth
68	65	CAPS	9	10	Micro Demon	10	12	Statware
29	42	Chattanooga Choo Choo	43	37	Micro Help	46	21	Survey Software
44	39	Chattanooga Systems	67	63	Micro Peripheral Corp.	70	69	Susie Software
1	4	Covington	53	59	Nictrix	22	16	Swindell Judy
18	55	Cryptronics	29	71	Node	41	35	Swindell Judy
24	18	Custom Software	46	20	Pacific Marine Corp.	47	44	Tobias
3	5	DataPort	CIII	2	PG Design	66	62	Touchbase
53	60	DFW	49	48	PG Design	CIV	3	Traveling Software
30	28	Diskus Products	23	17	Polar	13	13	Traveling Software
48	45	Elxor	45	41	PORTAPRO	47	43	Wagoner
49	47	FACS	16	49	P.C.S.G.			

The index on this page is provided as a service to readers. The publisher does not assume any liability for errors or omissions.

# 32K RAM CHIPS FOR YOUR MODEL 100



■ Expand your (8K, 16K, 24K, or 32K) Model 100 to an additional 32K.

■ Store two 32K programs without having to reload.

■ Each 32K is bank selectable with a single line BASIC program (programs may not transfer information between banks).

■ The application programs already in your Model 100 (BASIC, TEXT, TELECOM, ADDRSS, SCHEDL) may be used in either bank.

■ The expansion RAM maintains its own menu of the data stored in it.

■ Self-contained battery backup power

■ Low power CMOS design, enhances battery life.

■ Go beyond the memory range by installing additional 32K modules without losing the data on the first 32K module.

■ Easy installation! Installs into the expansion bus in the bottom of the Model 100 — Then concealed once the cover is reinstalled.

■ High quality manufacturing and warranty.

■ The problem of "more memory" for the Model 100 no longer exists. We've made a great computer near perfect!

■ List 325.00 (Just one third the cost of an additional Model 100.)



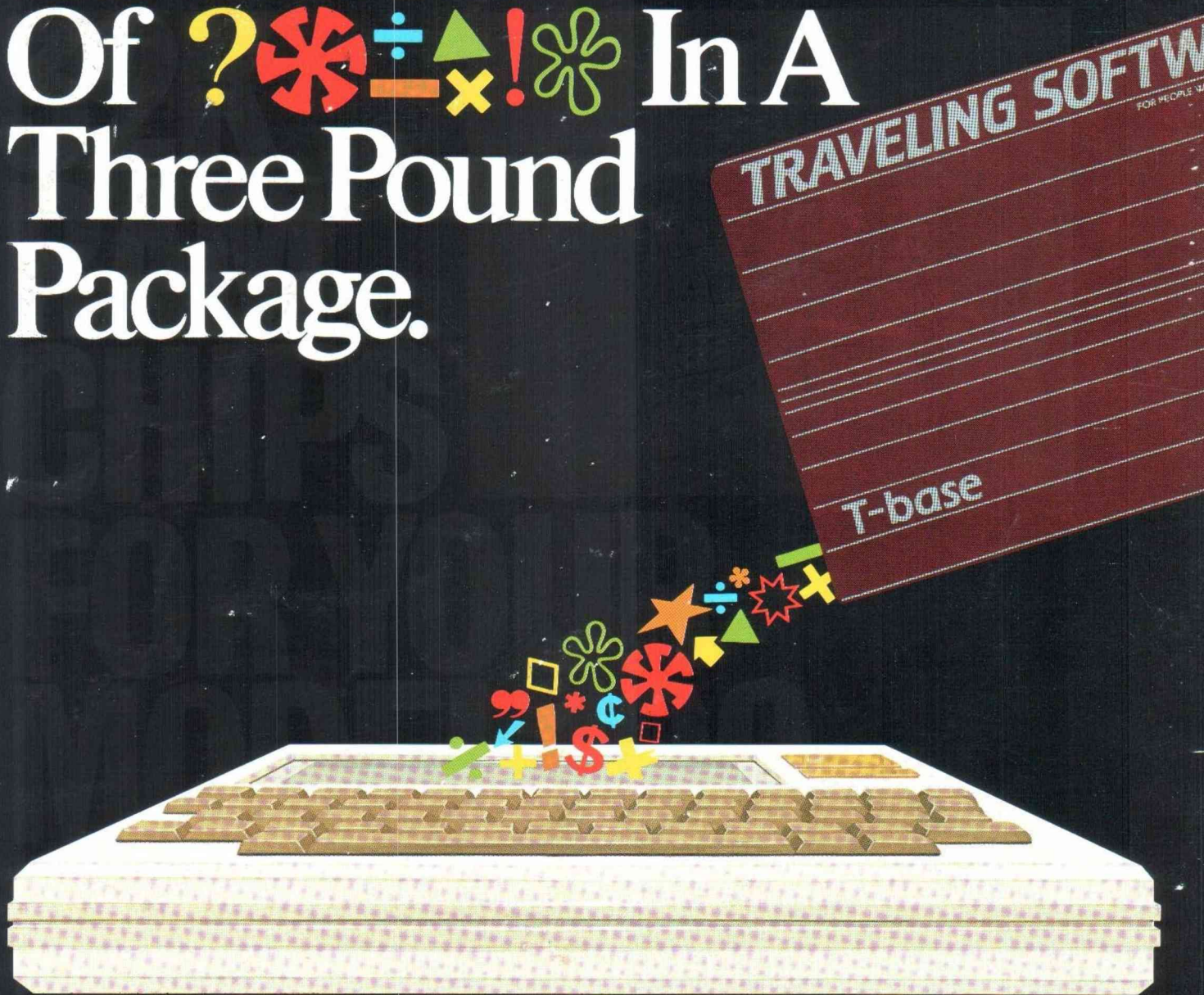
**P.G.  
DESIGN  
ELECTRONICS, INC.**

66040 GRATIOT, RICHMOND, MICH. 48062 (313) 727-2744

NO WARRANTY ON BATTERIES TRS-80 TRADE MARK RADIO SHACK  
DEALER INQUIRIES INVITED

Circle No. 2 on Reader Service Card

# How To Put Ten Pounds Of ?\*÷! In A Three Pound Package.



?\*÷!\* is the stuff computer programs are made of. And now, Traveling Software has figured out a way to make your three pound lap-size computer do what only the big boys could do before.

Introducing T-base, the most powerful data base management system ever written for your TRS-80 Model 100, NEC PC-8201 or Olivetti M10.

T-base, a sort of place-for-everything-and-everything-in-its-place organizer, that allows you to keep multiple files of information or forms. But unlike simple filer programs, T-base is a relational data base manager. This allows you to borrow information that relates to one file from data contained in another. The net result is you can store more data by eliminating the unnecessary ?\*÷!\*. And because T-base can link one file to another you have the ability to look at your data in a number of different ways. T-base also allows for the creation of custom printed or LCD display reports.

T-base has spreadsheet capabilities too! T-base allows you to build in your own formulas on your forms with automatic recalculations when any of your variables change.

Simply put, T-base is the most important software ever written for your notebook computer. And because of its condensed format and broad data capabilities, your 3 pound package can do more than even you probably expect. T-base—it beats the ?\*÷!\* out of the competition.

Other great Traveling Software programs: The Traveling Appointment Manager, Expense Manager, Time Manager, Sales Manager and Project Manager, plus The Traveling Writer.



Call now for the dealer nearest you.

Traveling Software, Inc.  
11050 Fifth Avenue N.E.  
Seattle, WA 98125

**1-800-343-8080**

Look for Traveling Software available for other lap-sized computers.